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Improving Readiness Reporting: Thoughts on Content and Design of the DRRS

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PREFACE

The Institute for Defense Analyses prepared this document in fulfillment of the task order "Improved Readiness Metrics," sponsored by the Office of the Under Secretary of Defense (Personnel and Readiness).

The authors are fully accountable for the content of this report but would like to thank the many people who assisted us in our efforts. Much of this report was written in increments in response to issues raised by the publication of the new DoD Directive establishing the Department of Defense Readiness Reporting System. These increments were shared across the readiness reporting community and the comments we received were incorporated into this report.

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SUMMARY

The objective of this study was to assist the Department of Defense in the development of policies, techniques and tools necessary for the implementation of the Department of Defense Readiness Reporting System (DRRS). This paper is a report of the results of those efforts. The paper reflects our continued analysis of a number of key readiness issues associated with the development of the DRRS and the Enhanced Status of Resources and Training System (ESORTS). It is written in the hope that the information provided herein would be of value to the DRRS/ESORTS developers and to the DoD military and civilian personnel throughout the department who are wrestling with their responsibilities for implementing DRRS. In addition, with the direction from the Secretary of Defense on 31 October 2003 to establish the Joint Defense Capabilities Process (JCDP), this report has been revised to demonstrate the potential contribution DRRS can make to the new process.

The analysis conducted for this study has enhanced our conviction that DRRS has the potential to lead to a transformational change in the management of the Department of Defense. Once DRRS is operational, the Secretary of Defense and DoD chain of command will be better able to see the department's readiness to perform assigned missions and provide the capabilities associated with the execution of the National Security Strategy. Visibility into DoD capabilities and mission readiness needs to be at a level of detail that will allow commanders and resource managers to identify the most important shortfalls in current DoD capabilities and to direct resources precisely to correct those shortfalls. DRRS has the potential to provide an important contribution to the new Joint Defense Capabilities Process as well as to an operational management system that will allow the Secretary and the heads of the DoD components to manage the department in ways that have not been possible before.

The ten chapters and seven appendices of this report address a number of key issues associated with the development of DRRS. Each of the chapters deals with one of the key problems or issues that have been raised by the readiness community in the department. (Some of the chapters were initially drafted as papers and retain that terminology here.)

Chapter I describes "the systems approach to readiness" that served as the theoretical basis for the initial Independent Study and that is developed in greater detail in this volume. The chapter describes how the systems approach can facilitate capabilities-based planning and readiness reporting for large organizations.

Chapter II discusses the readiness reporting responsibilities of each of the DoD components based on the responsibilities laid out in the DoD Directive 7730.65, The Department of Defense Readiness Reporting System.

Chapter III discusses the readiness management and reporting responsibilities of the Office of the Secretary of Defense. This chapter is derived from a study conducted for the OUSD (AT&L). It is based on an analysis of the requirements of existing DoD Directives and provisions of law that govern the responsibilities of that office. The chapter provides examples of the readiness related responsibilities of each of the OSD principals and detailed examples of the readiness related responsibilities of the USD (AT&L).

Chapter IV describes communication difficulties within the department owing to the use of different vocabularies and taxonomies by different commands and makes a plea for linguistic interoperability in the DoD.

Chapter V describes how the Air Force can use current management tools such as Designed Operational Capability (DOC) statements and Unit Type Codes (UTCs) as a basis for Air Force readiness reporting in DRRS.

Chapter VI describes how the Joint Staff (J-7) developed Joint Training Management System (JTIMS) might be incorporated into the development of ESORTS.

Chapter VII describes an approach to reporting the readiness of large organizations such as a division or a battle group based on variants of existing approaches.

Chapter VIII discusses an approach to the use of standards in readiness reporting. This chapter attempts to bring clarity to the confusion over readiness input standards and readiness output standards. The chapter also discusses the study team's concerns about the use of the training-based UJTL for readiness reporting.

Chapter IX discusses how the existence of the UJTL and the service and agency task lists makes it very difficult for joint commanders to understand task

readiness across a joint force. The chapter suggests that a Universal Task List be created that would include all DoD tasks.

Chapter X describes how DRRS and the Joint Training System might be used to enhance DoD planning and operations.

The appendices provide much greater detail on issues addressed in the first ten chapters. Appendices D, E, and F provide a detailed task analysis of three major systems that support three important DoD capabilities.

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INTRODUCTION

The objective of this follow-on study was to assist the Department of Defense in the development of policies, techniques and tools necessary for the implementation of the Defense Readiness Reporting System. This paper is a report of the results of those efforts. The paper reflects our continued analysis of a number of key readiness issues associated with the development of the Defense Readiness Reporting System (DRRS) and the Enhanced Status of Resources and Training System (ESORTS). It is written in the hope that the information provided herein would be of value to the DRRS/ESORTS developers and to the DoD military and civilian personnel throughout the department who are wrestling with their responsibilities for implementing DRRS. In addition, with the direction from the Secretary of Defense on 31 October 2003 to establish the Joint Defense Capabilities Process (JCDP), this report has been revised to demonstrate the potential contribution DRRS can make to the new process.

The analysis conducted for this study has enhanced our conviction that DRRS has the potential to lead to a transformational change in the management of the Department of Defense. Once DRRS is operational, the Secretary of Defense and the DoD chain of command will be better able to see the department's readiness to perform the full range of current DoD missions and to provide the capabilities of interest to the DoD leaders. Our research has convinced us that visibility should be at a level of detail that will allow commanders and resource managers to identify the most important shortfalls in current DoD capabilities and to direct resources precisely to correct those shortfalls.

In addition, DRRS has the potential to be an important link in the Joint Capabilities Development Process (JCDP) as well as an operational management system that will allow the Secretary and the heads of the DoD components to manage the department in ways that have not been possible before. Figure 1 shows how the Planning, Programming, and Budgeting System and the Operational Planning System might work to link the program world with the operational world in the context of the new JCDP.

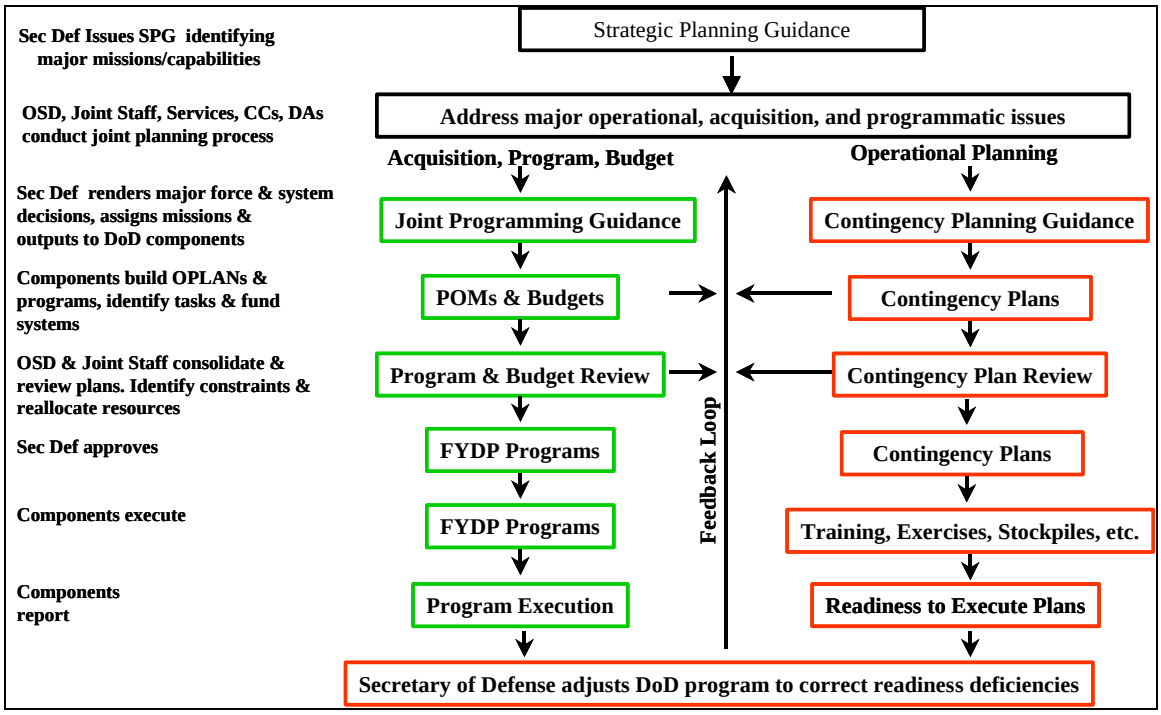

Figure 1. Reformed DoD Management System

Here is a description of the major phases that a reformed DoD management system might encompass.

1. The "planning phase" in which the DoD addresses both near and long-term requirements, including the requirements for both current and future missions, identifies problems, and sets both near and long-term priorities. This phase includes the Quadrennial Defense Review and other planning activities. The Strategic Planning Guidance would be the major product of this phase.

2. The "guidance phase" in which the Secretary of Defense issues mid-term Joint Planning Guidance (JPG) and near-term Contingency Planning Guidance (CPG) to all the DoD components.

3. The "response phase" in which the DoD components build their POMs, budgets, and contingency plans in response to the guidance. It is in this phase that the DoD components identify the capabilities that they must design their plans and programs to achieve. These capabilities will be the basis for the Mission Essential Tasks (METs) on which they will report their readiness.

4. The "review phase" in which the military and civilian staffs of the Secretary of Defense review the POM, budget, and contingency plan submissions of the DoD components. It is during this review phase that the staffs will determine the extent to which the current plans and programs—operational

and program/budget—meet the department's need to provide the capabilities required of it.

5. The "approval phase" in which the Secretary of Defense approves the DoD component programs, the combatant commander contingency plans, and the supporting contingency plans of the services, agencies, and supporting combatant commanders.
6. The "execution phase" in which the DoD components execute the approved plans.
7. The "execution reporting phase" in which the DoD components report their execution of their programs and report their readiness to execute their METs associated with the approved contingency plans and desired capabilities.
8. The "execution adjustment phase" in which the Secretary of Defense makes adjustments to the programs and contingency plans as necessary to meet the near-term and the long-term capability needs of the department. Resource-created shortfalls that cannot be corrected in the current budget year would be automatically referred to the next cycle.

Figure 1 shows how the program/budget and the operational planning systems can operate in parallel to meet the near-term and long-term needs of the Department of Defense. These two systems do not operate effectively together today because of a number of problems with the operational planning system. By providing a timely ability to assess the department's readiness to execute the missions assigned by the Secretary of Defense, i.e., to provide the capabilities of most immediate interest to DoD leaders, the DRRS has the potential to help correct the most significant of those flaws. In addition, the DRRS has the potential to provide the first real opportunity to link an understanding of the department's readiness to execute the national security strategy directly with the PPBS and the Defense Acquisition System. For the first time, programmers will have the information they need about current capabilities that will allow them to make real-time adjustments in resources to meet immediate capability shortfalls. They will also be able to link better understanding of current readiness to decisions on resource allocations in the long-term program. No longer must programmers live primarily in the future, at the end of the FYDP. And, even more importantly, the department's senior leaders and warfighters will have greater ability to hold program managers responsible for achieving their approved programs.

Perhaps the most important contribution that DRRS might make to overall DoD management is that it represents a major step in the process of making information available to people and organizations across the department that need it to do their jobs. And it will do it in near real time. More and more information is available on the Internet or the Siprnet. The military departments are already working on achieving this goal within their departments. The Joint Total Asset Visibility Program, although voluntary, provides a great deal of information on the status of department-wide assets. DRRS will move this process forward in a major way.

DRRS has the potential to contribute to the Joint Defense Capabilities Process and to improvements in both the deliberate planning process and the crisis response aspects of the Joint Strategic Planning System (JSPS). It will provide a listing of all readiness-related entities in the DoD. It will provide a taxonomy of tasks that planners can use to build a capability architecture and to identify their OPLAN tasks. It will show the tasks that each entity is designed to perform in terms of specific output and will provide reports on their readiness to perform those tasks. It should allow operational commanders to keep track of the task readiness of the many measured units on which they rely for the execution of a deliberate plan and to identify important impediments to the performance of a MET. It even has the potential to provide a format for future OPLANs. DRRS has the potential to assist crisis response planning by facilitating the unit identification and selection process in an emergency and by providing a template of the type of units and tasks associated with a capability or a combatant commander's OPLAN-related METs that can be used by crisis response planners attempting to identify units for a similar task in a crisis.

A desire to include the operational/readiness domain in the JCDP and to build a link between the operational/readiness domain and the program/budget domain seems to call for some additional changes in the operational planning process that will make all the DoD components full participants. These reforms appear to be essential if the DRRS is

to be fully implemented. Here are the major flaws that our research reveals in the operational planning process today:

- The Contingency Planning Guidance, signed by the Secretary of Defense, is addressed only to the Chairman of the Joint Chiefs of Staff. Although the CPG is available to the combatant commanders, the services and the agencies, it is not directive in nature. For this reason, it does not have the impact on them that is needed to make this process work.
- The CJCS receives the CPG and uses it as the basis for the Joint Strategic Capabilities Plan (JSCP), but the JSCP is addressed only to the combatant commanders. Neither the CJCS nor the combatant commanders have the ability to ensure that the services and agencies are prepared to provide the support the combatant commanders need. As a result, although the services and agencies do participate in the planning process, neither the services nor the agencies are full participants in the operational planning system.
- The combatant commanders do not use the UJTL or the service/agency task lists as a basis for identifying capabilities or for building their OPLANs and contingency plans. As a result, there is little common basis of understanding across the department regarding what is to be done.
- The combatant commanders prepare OPLANs and contingency plans and submit them to the Secretary of Defense for review and approval. The services and agencies do not. If they have contingency plans, and not all do, they are not coordinated with the other DoD component plans and are not reviewed by the Secretary of Defense. In the absence of contingency plans, it is difficult to see how the services and agencies will be able to report their readiness to perform their METs, as the DRRS requires.
- The combatant commanders do not identify capabilities that they consider essential to their ability to perform the missions assigned them by the Secretary of Defense. As the department begins to manage according to the JCDP, it seems reasonable that the combatant commanders both identify these capabilities and report their readiness to provide them.
- The Secretary of Defense has not used the CPG to identify capabilities of special interest to him that he wants to DoD components to focus on in their near-term construction of OPLANs and contingency plans. For example, the Secretary used the Quadrennial Defense Review to identify six QDR goals that he wanted the department to work on but he did not include these goals in the CPG.

In order to correct these problems, in addition to meeting the Title 10 requirement that calls for the Secretary of Defense to provide guidance for contingency planning to the CJCS, it seems reasonable for the CPG to be addressed to all the DoD components

and for all the DoD components to participate in the operational planning process. All DoD components should use the CPG as a basis for identifying the near term capabilities that they are responsible for providing. They should build contingency plans for providing these capabilities and should submit them for review and approval by the Secretary of Defense. All DoD components should use a common task taxonomy as the basis for building their plans and as the basis for determining their METs.

There are a number of other changes in the way the Office of the Secretary of Defense participates in the operational planning process that would improve the process. Today the CPG is written in the OUSD (P) and addresses primarily policy-related issues. In addition, only the OUSD (P) reviews the combatant commander OPLANs and contingency plans. Other USDs and the ASD (NII) have major operational responsibilities that should be addressed in the CPG but are not. These USDs and the ASD (NII) should participate in writing the CPG and should also review the contingency plans to ensure that important issues such as materiel and personnel readiness are properly addressed.

Here are a number of specific changes that appear to be called for in the operational planning process if the DRRS is to be fully implemented and the DoD management system is to be reformed.

- Address the CPG to all DoD components and include the full spectrum of operational issues and requirements.
- Identify specific near-term capabilities the Secretary of Defense wants the DoD components to focus on in building their OPLANs and contingency plans.
- Require all DoD components to identify capabilities and to build contingency plans based on the CPG and using a common task taxonomy, to identify their METs based on those plans, and to coordinate those plans with one another.
- Submit all contingency plans to the Secretary of Defense for review and approval.
- Include all concerned OSD offices in the drafting of the CPG and in the review of the contingency plans.

Chapter I
THE SYSTEMS APPROACH TO READINESS

The new DoD Directive 7730.65, dated 3 June 2002, establishes the Department of Defense Readiness Reporting System (DRRS) and calls on each of the DoD component heads to report their readiness to perform their assigned missions in terms of their mission essential tasks (METs) associated with those missions. This paper describes how each of these component heads might report readiness in a nearly automatic, nearly real time fashion by using the "Systems Approach to Readiness."

WHAT IS A SYSTEM?

A system can be defined as an organization or a group of organizations with a common goal. A basic operational unit—a battalion, a ship, or a squadron—is a system whose common goal is to perform the mission essential tasks (its PRMARs or DOC) assigned that unit. A group of operational units—a division, a battle group, or a wing—is a system whose common goal is to provide a capability or to perform the mission essential tasks assigned that organization. The various sub-parts of the system are systems themselves and each contributes in its own way to the overall readiness of the system. For example, an Army division has combat maneuver battalions, artillery support battalions, aviation battalions, support battalions, an intelligence battalion, etc. that have different METs associated with the division MET and all contribute to the overall readiness of the division to perform the division MET. An Air Force Air and Space Expeditionary Force (AEF) has a range of METs that are performed by a some number of sub-elements, called UTCs,[1] that, in various combinations, actually execute the AEF's METs. In other words, an AEF is a system of UTCs that work together to perform the AEF's METs. An installation—a port, a training center, or a hospital—is another type of system whose goal is to perform the mission essential tasks assigned that installation.

A group of units and organizations with a common goal but different chain of command can also be a system. For example, the Defense Transportation System (DTS)

[1] See Chapter V on Air Force organization and use of UTCs.

is made up of many different organizations under the control of different DoD component heads that have a goal of transporting units and materiel to the location desired. In the context of the JCDP, the DTS provides a deployment capability, for example.

The measure of each system's ability to achieve its goal, i.e., its ability to provide an output compared with the required output can be defined as its readiness. A transportation system whose required output is 100 tons per day that has a current ability to deliver 80 tons per day might be considered 80% ready, for example.

DOD IS A SYSTEM OF SYSTEMS

DoD is widely recognized as a system of systems—operational systems, support systems, supply systems, communications systems, and functional systems of all kinds. DoD's ability to execute its assigned missions depends on the combined and synchronized capabilities of these systems to provide the right capabilities at the right time and for as long as necessary.

There are already a number of systems-based initiatives underway throughout DoD. TRANSCOM is working on a system that will allow it to manage the entire DTS—"from fort to foxhole." The Army is developing its Strategic Readiness System with the goal of becoming a readiness reporting system that measures the Army's ability to support the national strategy and allows the Army leadership to direct resources in order to influence readiness across the Army. The Air Force is developing the AEF UTC Reporting Tool (ART) that includes a report on the readiness of each UTC in an Air and Space Expeditionary Force (AEF). Since a UTC is the equivalent of a MET, the only thing the Air Force is missing is the concept of collecting UTCs into systems and reporting the readiness of the entire system. This logical development will likely occur when the AEF starts to report its readiness by MET. Finally, the entire DoD logistics community is engaged in initiatives associated with the DoD logistics system, often referred to as the supply chain. Once the structure of a supply chain is identified a logical next step is to report the readiness of the chain.

Each of these DoD systems is composed of sub-systems and sub-sub-systems that ultimately include all of the measured units that will report in ESORTS. The key to understanding DoD readiness at the macro level is to understand the readiness of DoD systems. The key to understanding the readiness of a DoD system is to understand the readiness of the system's component parts as they fulfill their role in the system.

There is a metaphor that helps to understand the concept of a system. Think of a system as a chain and readiness as a measure of the strength of the chain. Everyone understands that a chain is no stronger than its weakest link. In the readiness context, the challenge is to find the weakest link because it is the weakest link that determines the strength of the overall chain. If you want to increase the strength of a chain, i.e., its readiness, you must first increase the strength of the weakest link. It does not help to increase the strength of a link that is already stronger than the weakest link.

ESORTS IS CENTRAL TO THE SYSTEMS APPROACH TO READINESS

Directive 7730.65 calls for the DoD component heads to register all their readiness related units and organizations as measured units in ESORTS. This requirement means that, when fully implemented, ESORTS will contain reports on the readiness, in terms of METs, of all readiness-related entities throughout the DoD. These ESORTS reports will primarily be based on data drawn automatically from transaction databases maintained by DoD components in their normal, day-to-day operations. These data will be automatically compared with standards established for each measured unit by its chain of command. The result of this comparison will be a readiness measure that reflects the ability of the measured unit to perform one of its METs. Most of these data are now or soon will be maintained automatically throughout the DoD. Some will have to be collected and stored. Examples of data that will have to be collected for a comprehensive ESORTS system include unit training data and DoD civilian and contractor data.

Ultimately ESORTS reports may be collected for non-DoD entities like factories, civilian repair depots, CRAF, ports of embarkation and debarkation, etc. It is possible that some of these reports can be made in the same manner as reports of DoD entities. More likely, some DoD entity will be responsible for submitting a special report on the readiness of these non-DoD entities. Here are two examples:

- A detachment from the Military Transportation Management Command (MTMC) might be required to submit a report on the port or ports for which it is responsible. Such a report would address the status of the civilian facilities on which the DoD depends for the efficient operation of the port.
- The Defense Logistics Agency might be required to submit a report on the readiness of the factories on which it depends for production of supplies needed to meet DoD sustainability needs. DLA already has agreements with many civilian factories for surge production of food, clothing, medical

supplies, and spare parts. Surely DLA already knows the readiness of these entities to meet DoD demands, they just do not routinely report that readiness.

The incorporation of all DoD readiness-related entities in ESORTS is the key to understanding the readiness of a system and to understanding readiness DoD-wide.

THE JOINT TRAINING SYSTEM AS A BASIS FOR THE DRRS[2]

The IDA independent study of the DoD readiness reporting system recommended that the new DoD DRRS be based on the principles of the already established Joint Training System.[3] DoD D 7730.65 accepted these recommendations when it required the DoD component heads to develop Joint Mission Essential Tasks in support of missions as assigned by the Secretary of Defense, to state these JMETs in terms of the Universal Joint Task List, and to report their readiness in terms of JMETs.

There are five major reasons why this appears to be the right thing to do:

- The JTS is a top down, requirements-based system. It already incorporates the methodology of analyzing the requirements of the DPG, CPG, National Military Strategy and JSCP to derive combatant commanders' Joint Mission Essential Task Lists (JMETLs) - an essential feature of a DRRS that already exists.
- The system already produces JMETLs for the combatant commanders. These JMETs can be thought of as capabilities or as tasks that, taken together, provide capabilities. They are found today in the Joint Training Plans, and are updated periodically. These JMETs can serve as a start point for the DRRS. In addition, these JMETLs are used to formulate training objectives, which are assessed as part of the Chairman's Exercise Program (CEP). Thus, there is again a start point for assessing the training readiness of Joint Commanders' headquarters and forces.

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2 Although the JTS provided the basis for the concept of DRRS, especially the concept of a combatant commander identifying his METs, it is important to point out that the Joint Operation Planning and Execution System (JOPES) also calls for the identification of tasks that must be performed in the execution of an OPLAN. Although the majority of these OPLAN tasks do not seem to be taken from the UJTL or service/agency task lists, it seems likely that, over time, the tasks identified as part of the deliberate or crisis planning systems will be taken from the UJTL or service/agency task lists and many will be identified as METs in the context of DRRS.

3 The Congress, in Section 361 of the National Defense Authorization Act for Fiscal Year 2000, directed the Secretary of Defense to provide for an independent study of the requirements for a comprehensive readiness reporting system (RRS) for the Department of Defense. The study was sponsored by the Office of the Under Secretary of Defense (Personnel & Readiness). See IDA Paper P-3569, *Independent Review of DoD's Readiness Reporting System*, Institute for Defense Analyses, November 2000.

- The system is based upon a common language found in the Universal Joint Task List (UJTL). The CJCS has directed that that language be used in operational plans—all the more reason to focus on the JTS for readiness assessments and reporting.
- Service tactical task lists support the UJTL, so the services are involved in the system as well as the joint community. Defense agency and inter-governmental agency task lists are being developed, and will be included in future versions of the UJTL.
- The JTS utilizes a collaborative, JTA compliant, web-based tool called the Joint Training Information Management System (JTIMS). JTIMS was fielded in 1999, and has matured considerably since then. The combatant commands, and their components, use it routinely and know what it can provide—these are the same users who would be involved in the DRRS. JTIMS provides the automated means to query and create reports on numerous resident fields, such as JMETL to OPLAN association, and status of unit training on its JMETL. JTIMS, moreover, is evolving significantly. Recently the CJCS decided to incorporate the ability to manage operational deployments into JTIMS. JTIMS already manages and deconflicts exercises, so this addition provides for a powerful force management tool important to readiness issues. In addition, there is a prototype addition to JTIMS that uses operations templates to provide commanders and planners the capability to take an automated, systematic look at the missions they are assigned. These templates give the Joint Force Commander, his component commanders, as well as supporting combatant commanders, services, and defense agencies the ability to identify all of the supporting and command linked tasks associated with a JMET. The tool also gives a user the ability to associate a unit or units with a specific supporting or command linked task so that the combatant commander and all others will have the ability to see all the units and organizations associated with a JMET.

The one major change that seems to be necessary if the Joint Training System is to be modified to serve DRRS is the nature of the standards and metrics used to measure performance. The standards in the UJTL and the service task lists today are tied to training and are, quite reasonably, primarily training standards. As the UJTL and the service task lists are incorporated into DRRS the standards will likely have to be modified to include capability or output measures. Chapter VIII discusses this issue in greater detail.

Ultimately, it could be possible to use ESORTS and JTIMS to identify all tasks and units in a system in a manner that facilitates both deliberate and crisis response

planning and readiness evaluation and reporting in an automated, near real time readiness management and reporting system.

Overall, the JTS, with its supporting methodologies and tools (see Appendix A for a more detailed description of the Joint Training System), already provides many of the means, especially if linked to ESORTS, to achieve the goals of a new DRRS.

REPORTING THE READINESS OF A SYSTEM

The basic steps in a systems approach to readiness reporting are to 1) identify the capability or mission whose readiness you are interested in, 2) identify the systems that provides the capability or performs the mission whose readiness is to be reported, 3) determine the output required of the system, 4) identify the pieces of each system and register them as measured units in ESORTS that report their readiness to perform the METs they have as part of a system, 5) use ESORTS to obtain near real time reports of the readiness of the system. This is essentially what a combatant commander will do when he needs to determine the readiness of a Joint Task Force to execute a mission. It is what the services will do, for example, when they need to determine their readiness to perform one of their Title 10 functions. This is also true for other DoD systems including the Defense Transportation System (DTS), the Defense Communications System (DCS), and DoD supply chains of all types.

The systems approach holds out the potential for solving many problems. A systems approach provides the participants in the system an opportunity they do not have today to see where they fit into the system and how their actions affect the capability of the whole system. Given this ability to see the entire system, participants can make decisions with the capability of the whole system in mind. They need no longer focus on the bits and pieces of readiness over which they have visibility and control.

The systems approach also provides help in resolving the conflict between the need to allocate resources to fund current and future capabilities. If the DoD component heads and the Secretary of Defense are able to see an entire system, e.g., the Defense Transportation System described below, they may be able to identify elements of the system (weak links) that can be improved in the near term to enhance a current capability. They may be able to identify elements of the system, i.e., the capability, which can only be improved in the longer term with a modernization or force structure program. They may be able to identify near or long-term problems that can only be solved by a

transformational solution.[4] Across the board, the visibility into the potential tradeoffs provided by the systems approach will allow participants to make better choices about the allocation of scarce resources to meet capability needs, both today and tomorrow.

Knowing the readiness of each of these large complex systems is based on knowing the readiness of the entities that make up each system. These entities include operational units as well as supporting entities—depots, ports, pre-positioned supplies and equipment, communications nodes, hospitals, training centers, inventory control points, etc.—that are important to DoD readiness. All of these entities must report their readiness for the new approach to work. Each entity must report its readiness to conduct its mission-essential tasks associated with its role in the system whose readiness is being reported. For example, a port that is a node in the DTS is itself a system whose readiness can be measured and reported in ESORTS. In this example a port reports its readiness to execute its MET, which is to move a certain amount of cargo through the port on a daily basis. Other supporting entities are also systems. A hospital is a patient care system that can report its readiness to take care of patients (a patient throughput MET). A depot may have an engine repair system and can report its readiness to repair engines (an engine throughput MET). A training center is a unit training system that can report its readiness to train units (a unit throughput MET). A communications node is a data transmission system that can report its readiness to transmit data (a data throughput MET).

UNITS CAN REPORT THEIR READINESS BASED ON SYSTEMS

Operational units are systems of systems. Each operational unit has a mix of systems that are collectively engaged in the execution of each of a unit's METs. The Army evaluates training readiness of its operational units in terms of a unit's Battlefield Operating Systems (BOS), which include fires, maneuver, command and control, intelligence, logistics, air defense, and mobility/countermobility. Navy ships report on the basis of Primary Mission Areas that represent systems, e.g., the ASW system and the AAW system. The Air Force ART reports the readiness of UTCs that fit the definition of a system.

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4 We define transformation as the process by which DoD seeks breakthrough approaches to problems that limit the ability of the United States to address the challenges of the 21st century security environment. Transformation involves fundamentally new or different combinations of concepts, organizations, and technology that result in outputs that contribute to significantly enhanced military capabilities that gain/maintain a competitive advantage. See IDA Report, D-2886, Transforming DoD Management, December 2003 for a discussion of ways to find transformational solutions.

Every readiness-related DoD entity can report its readiness in ESORTS in terms of its ability to execute its METs based on an assessment of the ability of the entity's systems to provide the output associated with a MET. Figure 1 shows an infantry battalion as a system of systems. The battalion headquarters, including the battalion staff officers and any C3 systems, comprise the command and control system. The scout platoon provides the intelligence system. The three maneuver companies provide the maneuver system. The battalion ESORTS report would be based on a comparison of the required level of personnel, equipment, supplies, and training with the actual level for each of the battalion's mission-essential tasks.

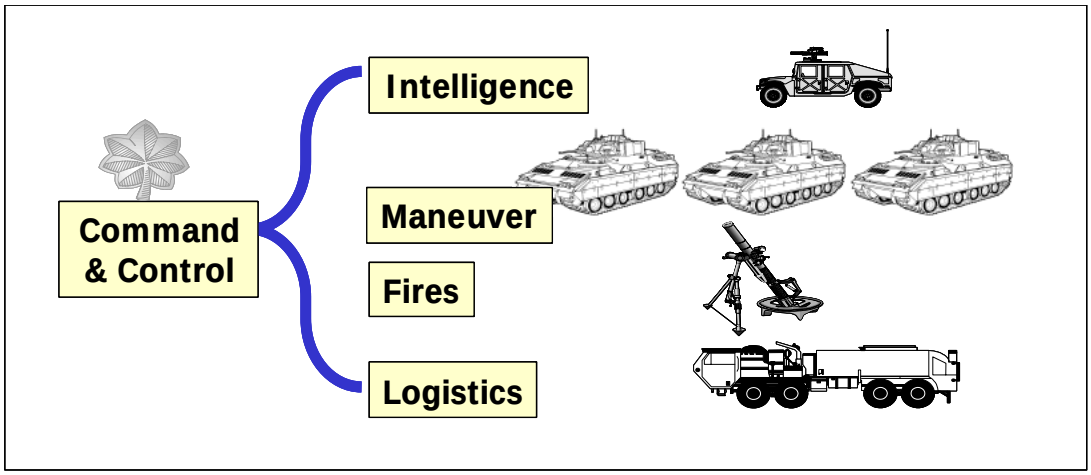

Figure I-1. A Mechanized Infantry Battalion Can Report its Readiness as a System of Systems

This hypothetical example is based on the current Navy practice for reporting ship and squadron readiness in GSORTS in terms of METs (PRMARs). For example, although a Navy ship may have a crew of 500 sailors, there may be just a few sailors, a few items of equipment, and a few training events that are included in a specific MET (PRMAR) like ASW. Other sailors, pieces of equipment, and training events are included in other MET (PRMAR) reports. Just as the Navy reports the readiness of its ships and squadrons based on the readiness of the systems that perform a ship or squadron MET (PRMAR), the rest of the DoD components can report the readiness of their measured units in terms of the systems that perform the unit's METs.

DETERMINING THE READINESS OF DOD SYSTEMS

There are many DoD systems that make vital contributions to overall DoD capabilities and readiness. The DTS—the system responsible for moving U.S. forces and

materiel from a peacetime location to some other location tied to the strategy—is one of the more important systems. If the Secretary of Defense is to have a picture of DoD capabilities and readiness, he should have an understanding of the capability provided by the DTS and of its readiness as part of that picture. Figure 2 is a schematic drawing of the DTS, i.e., an architecture. The major advantage that derives from looking at the readiness of the transportation system as a whole is that both operational and resource allocation decisions can be made with their impact on the overall output, i.e., the capability, of the system in mind rather than some piece of the system. Commanders at all levels will be able to see how their actions impact on the overall capability of the system and will be able to use the DRRS collaborative environment to work together to enhance the system's overall output. For example, today, commanders of each of the nodes shown in Figure 2 see only the readiness of their piece of the system and, naturally, seek to optimize the readiness of their node. This may lead to misuse of scarce resources if their efforts to enhance the readiness of their node detract from the overall readiness of the DTS, e.g., spending too much on a link of the chain that is already strong enough. In the future, commanders at all levels should be able to see the entire system, to see where they fit in the system, and to see how their efforts can enhance the output of the overall system rather than just their piece. Appendix D provides a detailed description of the DTS and of the many different tasks that must be performed if the department is to achieve the capability it seeks in the DTS.

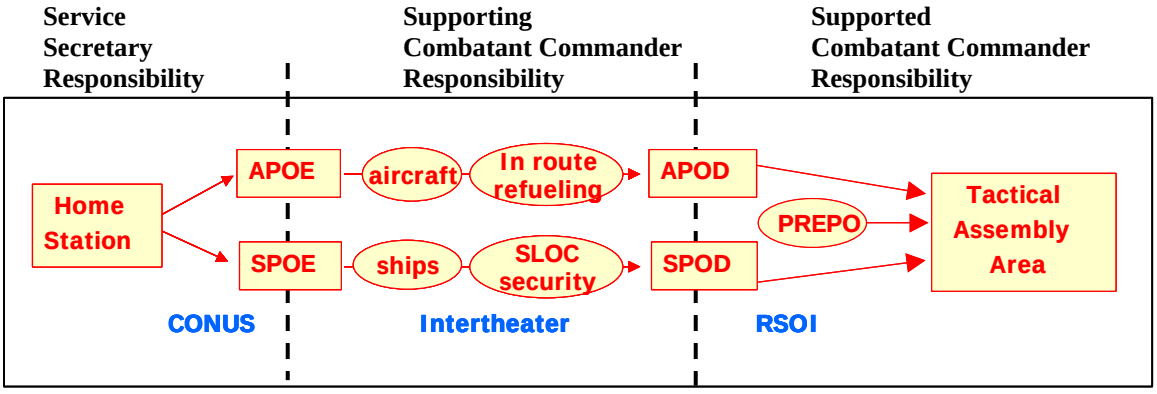

Figure I-2. ESORTS Can Show the Capability and Readiness of the Defense Transportation System

This short description of the transportation system helps to make clear one of the more difficult problems DoD faces in addressing the problems associated with capability-based planning and with readiness reporting. One reason why no one can accurately inform the Secretary of Defense of the capability and readiness of the transportation system is that there is no commander subordinate to the Secretary of Defense responsible

for managing or for reporting on the readiness of the entire transportation system. Instead, there are at least six combatant commanders and three service secretaries who have some responsibility for managing and reporting on the readiness of some piece of the DTS. Although each combatant commander and service is responsible for managing and reporting on some aspect of the DTS, none is responsible for ensuring the overall capability of the DTS or for reporting on its overall readiness. It is left to the Secretary of Defense and his military and civilian staffs to make sense out of a diverse set of reports, which focus on specific deficiencies and none of which provide an estimate of the capability or the readiness of the entire DTS in terms of the system output, i.e., throughput within a given time frame. The DRRS will provide the ability to see the readiness of the entire system even if there is no single DoD component head in charge of that system.

Unfortunately, in the absence of a measure of how each deficiency impacts on the readiness of the system in which it operates, efforts to eliminate a specific deficiency tend to be a form of micromanagement or sub optimization in which resources devoted to fixing a problem may not lead to an overall improvement in the output, i.e., capability of the system. This is because both the reporting organizations and the staff in the Pentagon tend to see only within the bounds of their stovepipe. They simply do not have a comprehensive view of how the problem they are investigating detracts from the overall readiness of the system. The responsibility for managing these systems may belong to another DoD component or cut across several organizations. Often no one has a clear view of the overall goal or purpose of the system in which the deficiency is found, and no one knows precisely who has the direct responsibility for correcting the individual deficiencies or those within a system as a whole.

In the DTS, for example, problems with the availability of spare parts for airlift aircraft, with the capacity of in route refueling bases, and with the capacity of ports of debarkation that are usually dealt with as individual problems to be solved on their own merits should be dealt with in the context of the system of which they are a part. Once again, the DTS is no more capable or ready than its weakest link. For example, regardless of the capability of the airlift force, if the enroute bases or airports of debarkation have inadequate capability, the overall airlift system can produce no more output than the maximum throughput of these bases, i.e., the bases act as a valve that restricts the flow of materiel. If the DTS goal is to provide throughput, then the impact of each problem must be measured in terms of its impact on the throughput of the system. The fact that there is a problem as seen by one element of the system does not necessarily

mean that the problem affects the overall throughput or readiness of the system. Nor should a deficiency be considered without a clear understanding of its relation to other systems that are dependent on its capabilities.

When participants try to fix or optimize the part of the organization or system they are responsible for or that they can see, they run the risk of misusing marginal resources. Using the chain analogy again, if they fix a link that is already strong in relation to other links of the chain, they are unlikely to improve the capability of the system. Looking at the overall system and measuring its readiness in terms of its ability to achieve its goal—throughput in the case of the transportation system—leads to a search for the weak link in the chain that creates a bottleneck or constraint in the system. The marginal dollar should be spent on the weak link.

The logistic system, another key DoD system, provides the logistic capability essential to the execution of the strategy. The logistic system is made up of a number of subsystems, including the systems that provide food, POL, ammunition, medical support, and spare parts. Just as no single commander is responsible for managing the logistic system or for reporting its readiness, no single commander is responsible for managing these subsystems or for reporting their readiness. Indeed major elements of these systems are not considered in today's readiness reporting system at all. See Appendix F for a detailed description of the logistics system performing a combatant commander's sustainment MET.

If the Secretary of Defense is to have a picture of DoD capabilities and readiness, he should have an understanding of the capability and readiness of the entire logistic system. And that measure of capability/readiness must include the capability/readiness to sustain the forces. For example, the service secretaries are responsible for reporting their service's readiness to sustain their forces for the execution of the most demanding aspects of the current strategy. The supported combatant commander must be concerned with his ability to execute his tasks associated with "focused logistics." COMTRANSCOM must be concerned with his readiness to conduct transportation operations, including the sustainment of operational forces, for the duration of the scenario. The director of the Defense Logistics Agency must be concerned with his readiness to provide Class I rations, Class II clothing, Class III bulk POL, Class VIII medical supplies, and Class IX repair parts to the entire DoD. He is responsible for reporting his organization's readiness to perform these tasks to the supported DoD component and to the Secretary of Defense.

The operational concepts laid out in Joint Vision 2020—dominant maneuver, precision engagement, focused logistics and full dimensional protection—are best understood as capabilities provided by operational level systems of systems. Today's readiness reporting system cannot determine the readiness of these systems. Although the combatant commander or defense agency functional area reports may address pieces of a system, they are stovepipe reports that do not encompass the entire system and do not provide a picture of the ability of the system to provide the output the combatant commander requires. For example, even though a combatant commander's precision engagement system might include an ISR, a C4, and a logistic subsystem, portions of which might be included in the current JMRR functional area reports, the combatant commander is unable to determine the overall readiness of his precision engagement system because he would not know the capability of the operational units associated with this system and would have no way of seeing how all the functional and operational stovepipes fit into the overall precision engagement system. Moreover, none of the combatant commander's subordinates, who report to the combatant commander on the basis of functional areas, would be responsible for ensuring the successful operation of the precision engagement system. See Appendix E for a description of a precision engagement MET.

In Korea, for example, one of the combatant commander's most important capabilities or mission-essential tasks is to counter anticipated North Korean artillery attacks. The combatant commander has built a system of systems to accomplish this precision engagement task. This system involves Army, Navy, and Air Force attack systems. It involves an ISR system that incorporates information from forces under the combatant commander's command and from supporting combatant commanders like COMSPACECOM and from the Defense Intelligence Agency. It also involves a C4 system and logistic support system. In order to understand his readiness to execute this mission-essential task, the combatant commander must understand the capability of this "counterfire" system in terms of its output over time. And, as with a chain, the system is no stronger than its weakest link. For example, matter how good the ISR capability, if the target information cannot be delivered effectively to the firing units, the system is not ready. If the combatant commander looks only at the bits and pieces of this system without looking at the output of the whole system, he may miss important pieces of the system, e.g., his dependence on satellite intelligence provided by SPACECOM and the DIA, and, in any case, will have great difficulty in determining his readiness to execute this task.

MISSION-ESSENTIAL TASKS AS SYSTEMS

The output of each of the systems described above can be seen as a measure of a system's capability or its readiness to execute a task, e.g., deploy the force. In other words, understanding readiness to execute a mission essential task requires understanding the readiness of the system designed to execute that task. This is why, in order to provide a comprehensive report on DoD readiness to execute the missions assigned by the Secretary of Defense, DoD D 7730.65 calls on the supported combatant commanders to report on their readiness to execute the tasks they list in the joint mission-essential task lists (JMETLs) they develop for each of their assigned missions. Supporting combatant commanders are tasked to report their readiness to execute the tasks on their METL associated with their supporting missions. Service secretaries are tasked to report their readiness to execute their Title 10 functional tasks as required to meet the needs of the supported combatant commanders. The directors of defense agencies are tasked to report on the readiness of their organizations to perform the METs for which they are responsible. In each case, understanding readiness to execute these tasks requires understanding the readiness of the systems that execute the task.

Preparing to Report MET readiness

Here is an example of how a combatant commander might use the systems approach to report his readiness to provide a capability or to conduct a MET that he has identified based on his analysis of a mission assigned by the Secretary of Defense. This list of steps is what would be needed the first time a combatant commander prepares to use ESORTS to report his readiness. Once these relationships have been established, ESORTS should be able to provide a near real time readiness report.

1. Using the planning process proscribed in the Joint Operation Planning and Execution System (JOPES) the combatant commander and his staff would identify the full range of capabilities needed and tasks that have to be performed. This list of tasks would be drawn from the Universal Joint Task List (UJTL) and includes supporting tasks his own organization is responsible for performing as well as command-linked tasks that other DoD components are responsible for performing. This process would presumably occur as part of a deliberate or crisis response planning process. This effort defines the system that the combatant commander identifies as needed to provide the capability or perform a task. The combatant commander and all subordinate and supporting organizations would be responsible for identifying the capability or output required to perform each task. This output would provide

the metric that would serve as the basis for determining readiness for each combatant commander MET.

2. The combatant commander selects subordinate measured units and assigns supporting tasks to them. This decision may be based on his review of the readiness of those units that is provided in ESORTS or it may simply be based on their availability as assigned or allocated units.

   a. The combatant commander and his staff would select units for each task or sub-task and they would use ESORTS to determine a unit's readiness for that task.

   b. Subordinate commanders would follow essentially the same process as the combatant commander. They would use the UJTL and service or agency task lists to identify tasks and sub-tasks and to select units to perform those tasks. They would use ESORTS to determine unit readiness for those tasks.

   c. The combatant commander might perform the same function for allocated units belonging to a force provider combatant commander or might simply transmit to that combatant commander the list of tasks to be performed so that the force provider combatant commander can better select forces to provide the supported combatant commander.

3. The combatant commander communicates the nature of the command-linked tasks to the DoD component responsible for performing each command-linked task. Since the combatant commander has no authority to assign missions to other DoD components and, to date, has had no good way to determine their readiness to provide the support he needs, the use of ESORTS should greatly enhance the combatant commander's understanding of his overall readiness and on the potential constraints on that readiness.

4. The supporting DoD component performs a mission analysis function similar to that performed by the supported combatant commander.

   a. The readiness report that results from this analysis is reported in the JQRR and is available, in near real time, on ESORTS.

   b. A force provider combatant commander would identify the specific units he would provide for specific tasks. The readiness of those units for those tasks would be provided by ESORTS.

5. Once the full range of tasks and sub-tasks has been identified and units/systems assigned to the tasks, ESORTS will provide the combatant commander and other relevant DoD parties an overall view of the combatant commander's readiness to execute the MET, including the readiness of all subordinate organizations and all supporting DoD components. It will also provide him and all others an opportunity to identify key readiness constraints,

i.e., the weakest link or links in the chain on which DoD management needs to focus its attention.

Detailed Example of MET Reporting

See Appendices D, E, and F for detailed examples.

INFORMATION TECHNOLOGY FACILITATES READINESS REPORTING

This vision of the future readiness reporting system calls for the DoD to collect and manipulate substantially more data than the current readiness reporting system. This increase in data handling is possible because of the increased capabilities inherent in the information technology systems in the DoD. These new capabilities should allow the DoD to capture large amounts of data from the lowest-level functional activities in the DoD, and to make these data automatically available to the DRRS. For example, personnel transactions entered into DoD personnel databases or maintenance transactions entered into a service maintenance database also can be captured by the readiness reporting system and incorporated into ESORTS. Ultimately, virtually all the status data included in ESORTS should be based on this form of unit-level transaction data. Reports of the readiness of DoD systems will be based on ESORTS reports for each node in each system and will be automatically updated in near real time. This capability holds the promise of significantly reducing the workload associated with the current readiness reporting system, even though the amount of data collected increases.

Ultimately readiness reporting should become nearly automatic. Virtual databases will automatically provide most of the data required for every unit readiness report. Commanders will be responsible primarily for reviewing their data to ensure accuracy and for reporting command assessments when those assessments differ from the objectively obtained assessments. There will be permanent web-based applications representing most of the systems the combatant commanders, services, and defense agencies depend on to execute their METs. These applications will be automatically updated with the most current unit data. Intelligent agents will continuously sweep these databases to identify readiness problems and bottlenecks and even to identify potential workarounds. Planners will identify tasks to be performed for both deliberate and crisis response plans and will select units by task. Planners will populate MET oriented systems with unit identifications and will receive near real time readiness assessments in return. Combatant commanders, service secretaries and directors of defense agencies,

and the Secretary of Defense will have a coherent and comprehensive basis on which to discuss both operational readiness and resource allocation issues.

Chapter II

ANALYSIS OF SERVICE, COMBATANT COMMANDER, AND DEFENSE AGENCY READINESS REPORTING RESPONSIBILITIES

There is some confusion concerning the readiness reporting responsibilities that are established in DoD Directive 7730.65. There are a number of aspects of this confusion:

- Confusion over requirements for reporting readiness of DoD components vs. reporting readiness of measured units in ESORTS.
- Confusion over reporting readiness to execute core competencies
- Confusion over linguistics.
- Confusion over the role of the Universal Joint Task List (UJTL) and the service task lists.

The first reason for the confusion is that the directive appears to identify two, if not three, readiness-reporting requirements for the service secretaries, the combatant commanders, and the heads of defense agencies. The confusion over core competencies is not surprising because some of the services have identified "core competencies" that serve as the basis for their programs and some have not. In addition, there is confusion about how these core competencies and the Mission Essential Tasks (METs) that the directive describes as enablers of the service core competencies relate to the METs that the directive identifies as tasks in support of a combatant commander on which the services are required to report their readiness. There is continued confusion over the meaning and usage of METs, core competencies, UJTL, PRMARs, ROC, DOCs, UTCs, etc. This chapter addresses all of these issues and makes a plea for linguistic interoperability based on the Universal Joint Task List.

Today, warfare means joint warfare. To prepare for and conduct warfare and other missions, the Department of Defense (DoD) has created a huge organization that can be viewed as a system-of-systems. The various tasks performed by all of the subordinate organizations (nodes in the system-of-systems) support, in one way or another, the missions that are ultimately assigned to the combatant commanders to

execute. Describing the readiness of the DoD and its component parts can and should be done using a language and format that is common to all. We believe the UJTL can provide that language and format.

Said another way, the readiness of military units, defense agencies, and even civilian organizations to perform similar tasks should be described in common terms, using the language of the UJTL. The readiness or output standards may differ, but that will not change the description of the basic task. The use of a common language and methodology will enhance interoperability, better reveal gaps in readiness, and more effectively serve the needs of top level decision makers, whether they be the combatant commanders responsible for performing DoD missions or the service secretaries responsible for providing the necessary forces.

It seems reasonable to argue that all the services, combatant commanders, and defense agencies should use a single taxonomy and nomenclature to describe their activities. The services and agencies exist to provide the forces and the support for those forces to carry out the missions assigned to the combatant commanders by the Secretary of Defense. This is their primary mission and reason for being. As the Department of Defense is organized today, the services cannot act independently of a chain of command that includes the combatant commanders. Each task performed by a service, including high-level Title 10 organizational tasks, ultimately is in support of combatant commander missions.

It is important to note that the UJTL and the service agency task lists represent relatively new approaches to identifying a true joint, DoD-wide taxonomy. These lists will continue to evolve and improve (and perhaps merge) as DoD users expand their understanding of the UJTL and of the tasks they have to accomplish to perform their various missions.

SERVICE SECRETARY READINESS REPORTS

Reporting Mission Readiness

Section 5.4.1 in Directive 7730.65 requires each service secretary to identify two categories of METs. The first category consists of those tasks that the service has to accomplish in support of the combatant commanders and of service Title 10 functions, i.e., man, equip, train, supply, mobilize, etc., that the service performs in support of combatant commanders. Section 5.4.2 calls on the service secretaries to report their service's readiness to perform these tasks. The second category includes tasks that the

units perform to meet the needs of the combatant commanders, e.g., attack, anti-air warfare, precision strike. Readiness to perform these tasks is reported in unit reports in ESORTS.

In general, the first category of tasks can be associated with a number of UJTL tasks and sub-tasks, e.g., SN 1, Conduct strategic deployment and redeployment, SN 4, Provide sustainment, SN 6, Conduct mobilization, and SN 7, Conduct Force Development. These service METs will be specific with regard to the support a service owes a combatant commander in the context of a specific combatant commander mission assigned by the Secretary of Defense. For example, the Army might report its readiness to perform task SN 6, Conduct mobilization, or a related sub-task in the context of the Army responsibility to mobilize a portion of the Army to meet the needs of a specific OPLAN. For each task that is identified as mission essential, the service secretary would be required to report the service's specific readiness in the JQRR.

The Army is currently developing a "Strategic Readiness System" that should facilitate the Army's ability to report its readiness to execute service tasks. One challenge for the Army will be the need to conform its Strategic Readiness System to the needs of the DRRS, the Secretary of Defense, and the others DoD components that need to make use of Army data. The other services might well use this same approach to report their readiness.

Reporting Readiness for Core Competencies

Section 5.4.3 calls on the service secretaries to "identify service core competencies and mission essential tasks that support those competencies." Although it does not call for specific readiness reports on service core competencies, it does not prohibit them, and any service secretary is clearly free to report readiness to execute a core competency if desired.

There is no definition of the concept of core competencies in the DoD Dictionary. The Army defines core competencies as "the essential and enduring capabilities of our service. While they are not necessarily unique to the Army, they define our fundamental contributions to our Nation's security." The Air Force introduced the formal use of the term "core competency" in 1996 to describe those overarching tasks it performs "which naturally flow from the medium in which [the Air Force] operates and which enable it to execute its missions."[1] Recently, the Joint Staff Directorate for Operational Plans and

[1] AF Issues Book 1997.

Joint Force Development (J-7) introduced the concept of Joint Core Competencies (JCC). JCCs are defined as, "the essential set of integrated capabilities the Joint Force must demonstrate, through the synergistic application of service capabilities, in order to achieve effects, objectives, and outcomes across the levels of war and the range of military operations."

The Army and Air Force have officially identified their core competencies; the Navy and Marine Corps have not. The table below lists the Army and Air Force core competencies and a set of preliminary joint core competencies. Aligned with each core competency is a similar task drawn from the UJTL.

The Army list of core competencies identifies two categories of competencies. One category includes specifically those things that Army forces are designed to accomplish and that the Army provides the combatant commanders. The Army core competencies of "Forcible Entry Operations" and "Sustained Land Dominance" are examples of this category. The second category of core competencies includes the things that the Army itself, i.e., the institutional Army, is responsible for. The Army core competency of "Mobilize the Army" is an example of this category.

Some core competencies are difficult to categorize because they involve a bit of both. The Army core competency of "Shape the Security Environment" is an example of this later category. None of this is surprising, however, because the Army core competencies were never designed to be the basis for readiness reporting and were never tied to the UJTL. Supporting each of these core competencies is a list of tasks such as those the Army provides for the Sustained Land Dominance core competency. These tasks can be thought of as enablers for each core competency or as METs for each core competency. These tasks could also be linked to the UJTL.

The Secretary of the Army certainly could report overall Army readiness to provide important core competences such as "Sustained Land Dominance" in the context of Section 5.4.3. Reports from the secretary are not necessary, however, because Army forces provide this core competency, not the Secretary of the Army. The readiness of Army forces would be provided through the operational chain of command, either by the Army component commander directly to the supported combatant commander or via a supporting, force provider combatant commander.

The Air Force list of core competencies is explicitly focused on the capabilities the Air Force is working to develop in the units it provides the combatant commanders. This list of core competencies is found in the list of tactical tasks that the Air Force built

in response to the requirement from the CJCS to identify tactical tasks that can be linked to the strategic and operational tasks listed in the UJTL. The Secretary of the Air Force might decide to report Air Force readiness for these core competencies on a generic basis. The readiness of Air Force forces for a specific OPLAN would be provided through the operational chain of command, either by the Air Force component commander directly to the supported combatant commander or via a supporting, force provider combatant commander.

Overall, the core competencies have been stated more at the level of a broad vision statement rather than in the specific terms of a MET. Indeed, a core competency might be seen as a service mission statement much as a combatant commander has a mission assigned by the Secretary of Defense. In the absence of specific guidance from the Secretary of Defense on service missions, it is appropriate for the services to identify their own missions. Just as a combatant commander analyzes his mission and determines his METs when he wants to build a specific plan for achieving his mission, a service might analyze its core competencies and determine the set of subordinate tasks that it must be able to accomplish in order to provide a specific core competency. A service secretary might well decide to report on the service's readiness for this core competency, especially if there were problems in achieving the competency to whose resolution the Secretary of Defense could contribute.

Ultimately, it will be up to the Secretary of Defense to decide if he wants the service to continue to maintain a capability to provide a core competency even if no combatant commander needs that kind of support.

Table II-1. List of Core Competencies and UJTL Equivalents

Army Core Competencies	Equivalent UJTL Tasks

• Shape the Security Environment
• Prompt Response
• Mobilize the Army
• Forcible Entry Operations
• Sustained Land Dominance
  o Close With and Destroy Enemy Forces
  o Precision Fire and Maneuver
  o Information Superiority
  o Command and Control of Joint and Multinational Forces
  o Control and Defend Land, people, and Natural Resources
  o Conduct Sustainment Operations
• Support Civil Authorities
	• SN 3.5through 3.5; SN 5.2
	• SN 1; ST 1.4
	• SN 6
	• ST 1.3.3
	• SN 7
	  o ST 1.3.6
	  o SN 3.2; SN3.3; ST 3
	  o SN 2.2 through 2.6
	  o SN 3.6; SN 5; SN 8; ST 5; ST 8
	  o ST 1.6.1
	  o SN 4; ST 4
	• SN 8.2; SN 8.3; ST 8.2

Air Force Core Competencies	**Equivalent UJTL Tasks**
• Air & Space Superiority • Precision Engagement • Information Superiority • Global Attack • Rapid Global Mobility • Agile Combat Support • Command and Control	• SN 3.3; SN 3.5; ST 1.6.2 • SN 3.2; SN 3.3 • SN 2.2 through 2.6 • SN 3 • SN 1; SN 3.1 • SN 4 • SN 5
Joint Core Competencies	**Equivalent UJTL Tasks**
• Joint Strategic Mobility • Global Force Application • Force and Homeland Protection • Networked C4ISR • Joint Logistics • Interagency and Multinational Interoperability • Space exploitation	• SN 1; ST 1.1 • SN 2; SN 3; SN 5; ST 1.3 • SN 3.4; SN 8.2; SN 9 • SN 2; SN 3.6; SN 5.1 • SN 4 • SN 5; SN 8 • SN 3.5

Reporting Unit Readiness

The reporting requirement contained in sections 5.4.4 and 5.4.5 are specific to units and other entities within a service. These sections include a requirement for the service to identify every readiness-related entity under service control, to register those entities as measured units in ESORTS, to identify the METs on which those units will report their readiness, and to establish standards/collect data necessary for those measured units to report their readiness in terms of METs. These ESORTS readiness

reports will be maintained in near real time. They will be available to commanders at all levels as necessary. Ultimately these reports will provide a major contribution to the quarterly readiness reports provided by the DoD component heads.

Here is the generic list of service, combatant command, and agency entities that of the IDA independent study[2] suggested should be included in ESORTS:

- Battalions, ships, and squadrons
- The headquarters at all higher command echelons (intermediate organizations), from brigades to divisions to corps, from groups to wings to numbered air forces, from battle groups to fleets, from regiments and MEBs to MEFs, and including the component commands of the unified commands.
- Headquarters with a responsibility to act as a JTF headquarters should report JTF readiness.
- Intermediate organizations, e.g., divisions, battle groups, wings, MEFs, report as a single entity
- Headquarters of Combatant Commands
- Any existing Joint Task Force (JTF) headquarters
- The Joint Staff, Service staffs, Departmental Headquarters, and the Office of the Secretary of Defense
- Defense agency entities such as nodes in the defense communications system
- Training establishments for both individual and collective training, including "peacetime" training centers and those that prepare units for deployment, such as the Army combat training centers and the Naval Strike and Air Warfare Center
- Installations and bases/ports that serve as power projection platforms and ports of embarkation/debarkation (including foreign ports and other nodes in the transportation system)
- Joint organizations such as Joint Intelligence Centers

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2 The Congress, in Section 361 of the National Defense Authorization Act for Fiscal Year 2000, directed the Secretary of Defense to provide for an independent study of the requirements for a comprehensive readiness reporting system (RRS) for the Department of Defense. The study was sponsored by the Office of the Under Secretary of Defense (Personnel & Readiness). See IDA Paper P-3569, Independent Review of DoD's Readiness Reporting System, Institute for Defense Analyses, November 2000.

- Critical components of the logistic support infrastructure, such as the service maintenance depots, inventory control points (ICP), the Defense Distribution System, and civilian industrial activities that have important readiness roles
- Entities responsible for pre-positioned weapons systems and support equipment, e.g., Army pre-positioned sets and operational projects, Navy Advanced Logistic Support Sites, Air Force Bare Base, land-based and afloat inventories of munitions and other pre-positioned support equipment and supplies, and Marine Corps units in the Maritime Pre-positioning Force (MPF)
- Essential components of the Defense medical system to include non-DoD hospitals

Ultimately, the inclusion of this range of entities in ESORTS will greatly facilitate the ability of the all DoD component heads to report their readiness to execute key METs. For example, the services today do not have a clear picture of the supply chain whose efficient operation is essential to the service readiness to meet the requirements of SN4, provide sustainment. Once the full range of sustainment entities, including those that do not belong to a particular service, e.g., DLA entities, are included in ESORTS, the service secretary will be much more able to report the service's readiness to execute SN4. Indeed, since ESORTS will be a near real time system, the service will be able to monitor its readiness to execute its key METs on a near real time basis.

Sections 5.4.4 and 5.4.5 are not specific as to what each entity should report its readiness to do. The key to successful implementation of ESORTS would be for every measured unit to report its readiness in terms that are meaningful to everyone in the DoD who needs to understand that measured unit's readiness. This seems to call for a common, DoD-wide taxonomy. As we describe in Chapters IV and IX, a modified UJTL seems to offer the potential to meet this need for each of the services.

The Army and Marine Corps have used the concept of METs in training for many years. They simply need to expand the use of METs to readiness reporting. This would entail identifying each measured unit's METs, identifying a readiness or output standard for the MET, determining what mix of people, equipment, supplies, and training are required for the unit to be able to perform each MET, and developing a method for determining the impact of shortfalls in any of these categories on the overall readiness to execute a MET.

For many years the Navy has been reporting the readiness of its ships and squadrons in GSORTS based on the readiness of each measured unit to perform each of

its Primary Mission Areas (PRMARs). PRMARs are MET-like constructs. Thus, the Navy could continue to report using PRMARs or convert their PRMARs to METs, i.e., change the name, and continue to report as they currently do. There are two competing taxonomies in use by the Navy. One is the "Required Operating Capability" (ROC) taxonomy that originated in the Navy force design process but that is also used in GSORTS and in training, in an implied manner, because ROCs are, in essence, PRMAR sub-tasks. The other is the Navy Mission Essential Task List (NMETL), a new training taxonomy the Navy built to meet the requirements of the Joint Training System.

Today, PRMARs form the basis for how the fleet thinks about all aspects of readiness, including training readiness. ROCs provide the underlying detailed definition for each of the seventeen mission areas and, in the training arena, are the basis for establishing required exercises and training events. All Navy readiness reporting is done on the basis of PRMARs. The two training battle groups, CCG-1 and CCG-4, use NMETs in training the carrier battle groups (CVBGs) prior to deployment. However, there is no readiness reporting done based on NMETs. Some of the CVBGs are starting to use NMETs for internal evaluation. The training battle groups equip each CVBG with software that can be used to display NMET readiness.

The two Navy taxonomies appear to use similar tasks but different numbering systems. The obvious solution is to merge these two taxonomies into a taxonomy that will have meaning both in a Navy context and a joint context. Ultimately there should be a single taxonomy that serves as the basis for readiness reporting, force development, and training. This taxonomy should facilitate joint operations. Today, the Navy METL is developed using task analysis. In the aviation and submarine communities, that analysis is done independently of the system of ROCs. The surface community uses the ROCs as a check on the NMETs to insure that all required capabilities have been addressed. The authors of this paper believe this latter procedure should be used Navy-wide. The Navy should complete a thorough task analysis for its units and organizations, using the existing ROCs to insure completeness and the inclusion of all essential Navy core competencies. PRMARs should be abandoned, and the present numbering system for ROCs should be replaced by the numbering system that is used in NMETL development and that conforms to the UJTL. Where appropriate, metrics developed for the existing NTL should be incorporated.

Here is a simple example:

Under the Operational heading OP 6, Provide Operational Protection, the combatant commander has the task OP 6.1.4, Counter Enemy Air Attack in Theater of Operations/JOA.

Under the PRMAR heading of AAW, the Navy lists the task, AAW 9, Engage Airborne Threats Using Surface-to-Air Armament.

One step down, the Navy lists the ROC task, AAW 9.6 Engage Airborne Threats Using Soft-kill Weapon Systems (Chaff and/or ES Decoys).

The Navy Tactical Task list today lists similar tasks:

NTA 3.2.7 Intercept, Engage, and Neutralize Enemy Aircraft and Missile Targets (Defensive Counter Air)

NTA 3.2.9 Conduct Nonlethal Engagement

It seems possible to reformat the Navy Tactical Task list so that it both conforms to the UJTL and includes the required operational capabilities/tasks currently listed under the PRMAR headings. For example:

Move AAW (or part of AAW) under the heading of NTA 6, Protect the Force. This might give you:

NTA 6 Protect the Force

NTA 6.1 Conduct Anti-Air Warfare, or Intercept, Engage, and Neutralize Enemy Aircraft and Missile Targets (Defensive Counter Air)

NTA 6.1.1 Engage Airborne Threats Using Surface-to-Air Armament

NTA 6.1.2 Engage Airborne Threats Using Soft-kill Weapon Systems (Chaff and/or ES Decoys) or Conduct Nonlethal Engagement

Such a system preserves the Navy PMARs, although they would now be called Navy METs, and conforms to the UJTL. Should the Navy convert PRMARs and ROCs to METs, they would be able to eliminate the confusion that currently exists. Their next task would be to identify other entities that need to become ESORTS measured units and to identify their METs.

The Air Force currently uses DOC statements, written by a higher headquarters, to establish the basis on which its measured units report in GSORTS. Each DOC statement includes a list of tasks that are equivalent to the METs for that unit. In fact, the

DOC statement is based on tasks listed in the Air Force Task List. The DOC statement also includes additional Air Force management information. The Air Force uses Unit Type Codes (UTCs) as the basic building bloc to source their operational deployments. UTCs represent a slice of the basic unit that includes the mix of people, equipment, supplies, and training that are required to perform a specific set of tasks. Additionally, the Air Force built the Air Force Task List (AFTL) in response to the requirements of the Joint Training System. Unfortunately, the Air Force chose to structure the AFTL in accord with Air Force core competencies instead of using the UJTL nomenclature. All three taxonomies address the same things—the tasks Air Force units/UTCs perform. The simple solution to these three separate taxonomies is to combine them into one that has meaning in a joint world, the UJTL and the AFTL. In other words, the solution is to change the name of a DOC to a mission essential task list (METL), to retain the same management information the Air Force currently provides in its DOC statement, and to reconfigure the AFTL so that it uses the same nomenclature as the UJTL.

COMBATANT COMMANDER READINESS REPORTS

Reporting Mission Readiness

Sections 5.5.1 and 5.5.2 in Directive 7730.65 requires combatant commanders to analyze the missions assigned them by the Secretary of Defense and, using the UJTL, to develop a list of mission essential tasks on which they are to report their readiness in the quarterly readiness report, the JQRR. This charge is consistent with the recent change in the policy for building OPLANs that calls for combatant commanders to identify METs in the course of building their OPLANs. The METs on which a combatant commander is likely to decide to report the readiness of his command will be drawn from the list of strategic theater and operational tasks in the UJTL. The combatant commander's assessment of his readiness to execute these METs will be based on reports he receives from his component commanders, from supporting combatant commanders, from the services, and from the defense agencies.

The readiness of assigned or allocated forces to execute assigned tasks will be based on unit readiness reports in ESORTS. Reports on units assigned to the combatant commander will generally pass to the combatant commander from the component commander. Reports on allocated units will generally pass from a force provider combatant commander. These reports will all be available as needed in ESORTS.

Reports on the readiness of supporting combatant commanders, services, and agencies will be provided directly to the supported combatant commander at some point prior to the time the supported combatant commander must deliver his readiness report to the Secretary of Defense. The supporting combatant commanders, services, and agencies will generally provide the same or similar reports in the JQRR.

Reporting Unit Readiness

Sections 5.5.3 and 5.5.4 call on the combatant commanders to identify and include as measured units in ESORTS the joint operational and support organizations under their command that are needed to execute JMETs. These operational and support organizations include combatant commander headquarters, JTF headquarters, Joint Intelligence Centers, and other joint units/organizations. The combatant commander staffs and the Joint Staff will obviously be involved in developing the resource and training standards needed to allow these units/organizations to report in ESORTS.

DEFENSE AGENCY READINESS REPORTS

Reporting Mission Readiness

Sections 5.6.1 and 5.6.2 of DoD Directive 7730.65 call on the heads of defense agencies to identify their METs based on their responsibilities to combatant commanders and their functions described in Title 10. Unfortunately Title 10 does not list functional responsibilities for defense agencies as it does for the services. Nor does the Secretary of Defense assign a mission to the defense agencies in the CPG as he does to the combatant commanders. Nevertheless, the defense agencies understand that they have responsibilities to the combatant commanders, the services, and each other that should serve as the basis on which they identify their METs. For example, the head of DLA is well aware of his responsibilities to provide a full range of supplies from Class 1, rations, to Class IX, spare parts, to combatant commanders and services alike. The head of DISA is well aware of his responsibilities to manage the Defense Communications System.

Each of the defense agencies will be responsible for identifying its METs in the context of their responsibilities to support a combatant commander's OPLAN and a service supporting plan. Each defense agency will be responsible for reporting its scenario-based readiness for each of its METs. These reports will be provided to the combatant commanders and services so that they can prepare their own reports and to the JQRR.

Reporting Unit Readiness

Sections 5.6.3 and 5.6.4 call on the defense agencies to identify all readiness-related entities within their organizations and to include them as measured units in ESORTS. This will be an especially challenging task for the defense agencies who have never participated in GSORTS and who depend on many civilian-manned entities, both DoD civilian and commercial. For each of these entities the defense agencies will have to identify METs, to determine what mix of resources is necessary to be ready to execute a MET, and to determine the algorithm to apply to determine the impact of resource shortfalls on readiness.

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Chapter III

READINESS MANAGEMENT AND REPORTING RESPONSIBILITIES OF THE OFFICE OF THE SECRETARY OF DEFENSE

HISTORY OF READINESS MANAGEMENT AND REPORTING

For many years the maintenance of readiness to execute the national strategy has been the top priority of the Department of Defense. In the first Defense Guidance, signed by Secretary Rumsfeld in November l976, readiness was given equal priority to modernization in the allocation of resources. In subsequent years DoD resources were divided into four "pillars" of readiness, sustainability, force structure, and modernization and readiness was made first priority.

The primary OSD readiness concerns during this twenty-five year period were tied to the PPBS and focused primarily on an analysis of the resource allocation decisions made in the service POMs. The principal readiness issues addressed by the OSD staff were associated with the O&M budget, seen in DoD as the "readiness account." Key issues here were funding for ship overhauls and depot maintenance, the repair and maintenance backlog of DoD installations, and flying/steaming hour and tank training mile programs. Other issues addressed in the context of what we now call readiness were actually in the category of sustainability. The major issues in this category were in the funded levels of munitions and spare parts. OSD staff personnel who saw themselves primarily as program and budget analysts raised these concerns in the program review and budget review process. These staff members saw their responsibility to the Secretary of Defense as ensuring adequate funding for these important programs.

It is important to note that, during this entire period when readiness was of the highest priority in the DoD, the Secretary of Defense never officially defined readiness or issued a DoD Directive on readiness management or reporting. Readiness reporting responsibilities were left to the Chairman of the Joint Chiefs of Staff who had no authority over the service secretaries or the heads of the defense agencies and who took a relatively narrow approach to the topic. Beginning in l968 the CJCS was responsible for the management of a unit readiness reporting system. This system became the Status of

Resources and Training System (SORTS) in l986. The system focused on the status, in terms of resources and training, of only deployable units, primarily battalions, ships, and squadrons.

In l994 the CJCS established the joint readiness reporting system, the Joint Monthly Readiness Report (JMRR) that was designed to meet the Goldwater-Nichols requirement for the CJCS to establish a uniform system for evaluating the readiness of the combatant commanders to carry out their assigned missions. This system provided a forum for the combatant commanders and the other component heads to identify readiness deficiencies. Although the results of the JMRR report were briefed to the Senior Readiness Oversight Council, OSD had essentially no role in managing either of these reporting systems.

RUMSFELD APPROACH TO READINESS MANAGEMENT AND REPORTING

The high priority associated with readiness was reaffirmed in the most recent Defense Planning Guidance, which stated: "Readiness remains the Department's top priority and it must be measured in the context of the new strategy. New metrics must account for actual readiness to perform missions assigned under the new strategy."[1]

This guidance goes beyond the simple statement that readiness is top priority with the previously implicit assumption that readiness was primarily, if not exclusively, a program/budget resource issue. This DPG declares that readiness must be measured in terms of "actual readiness to perform missions assigned under the new strategy." Adding substance to these words in the new DPG are the requirements in the new DoD Directive 7730.65 that establishes the new Department of Defense Readiness Reporting System.[2] This directive assigns specific readiness management and reporting responsibilities to the heads of the DoD components and to the Secretary's principal staff officers, the Under Secretaries and the Assistant Secretary (NII). These two documents provide the basis for a transformation in the DoD approach to readiness management and readiness reporting for the Department of Defense in general and for the Office of the Secretary of Defense in particular. The key aspects of this transformation are:

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1 DPG P 04-09 May 02, page 15.

2 Readiness is defined in the new directive as, "A measure of the Department of Defense's ability to provide the capabilities needed to execute the missions specified in the National Military Strategy."

- The requirement for a supported combatant commander to report his readiness to perform missions or provide capabilities assigned him by the Secretary of Defense in terms of his mission essential tasks (METs)
- The requirement for service secretaries, heads of defense agencies, and supporting combatant commanders to report the readiness (in terms of METs) of their organizations to provide the capabilities or the support the supported combatant commander needs to execute the missions assigned him by the Secretary of Defense.
- The requirement for all readiness related entities in the DoD to be included in SORTS.
- The establishment of a direct feedback link between the missions the Secretary of Defense assigns the combatant commanders and the combatant commanders' assessments of their readiness to perform those missions, including the readiness of assigned and allocated forces and of all supporting elements on which they depend.
- The requirement for OSD principals to participate actively in all forms of readiness management within the scope of their responsibilities.

DoD Directive 7730.65 contains a number of important responsibilities for the OSD that go considerably beyond their earlier readiness management and reporting activities.

The Directive states that, "The DRRS shall provide the means to manage and report the readiness of the Department of Defense and its subordinate Components to execute the national military strategy as assigned by the Secretary of Defense in the Defense Planning Guidance (DPG), Contingency Planning Guidance (CPG), Theater Security Cooperation Guidance (TSCG), and the Unified Command Plan (UCP). All DoD components will align their readiness reporting processes in accordance with this Directive."

These words clearly take OSD readiness management and reporting responsibilities beyond the narrow PPBS-only approach of the past. The inclusion of the DPG, the CPG, the TSCG, and the UCP serves to expand OSD readiness management and reporting responsibilities to the entire scope of DoD activities.

OSD READINESS MANAGEMENT AND REPORTING RESPONSIBILITIES

Having extended the coverage of the DRRS to all activities of the DoD, Directive 7730.65 establishes specific responsibilities for the heads of the DoD components, the

combatant commanders, the secretaries of the military departments, and the heads of defense agencies. The directive states that:

The Commanders of the Combatant Commands, Secretaries of the Military Departments, and Heads of Defense Agencies shall:

- *Develop mission essential tasks (METs) in support of missions assigned by the Secretary of Defense, in support of their responsibilities to combatant commanders, and in support of their Title 10 functions.*
- *Report readiness to execute these tasks in the context of the quarterly scenario readiness assessments.*
- *Identify and include as measured units within ESORTS operational and support organizations within the scope of their responsibilities needed to execute mission essential tasks.*
- *Develop resource and training standards for all organizations designated for inclusion in ESORTS.*
- *Identify critical readiness deficiencies, develop strategies for rectifying these deficiencies, and ensure they are addressed in program/budget planning and other DoD management systems.*

Based on this list of specific responsibilities, here are some examples of the readiness management and reporting responsibilities of the heads of the DoD components:

- The regional combatant commanders are responsible for identifying METs having to do with their responsibilities for the management of logistic activities in their theater. For example a regional combatant commander has to identify METs having to do with his responsibility for managing joint logistics for the duration of a war.
- The supporting combatant commanders are responsible for identifying METs having to do with their responsibilities to support another combatant commander. For example the commander of TRANSCOM has to identify METs having to do with his responsibility for managing the transportation system for the duration of a war.
- The secretaries of the military departments are responsible for identifying METs having to do with their Title 10 functions. For example, the secretaries are responsible for identifying METs having to do with their responsibilities for managing their Department's materiel readiness, maintenance capabilities, and supply chain—from factory to foxhole.

- The heads of defense agencies are responsible for identifying METs having to do with their functions. For example, the head of the Defense Logistics Agency is responsible for identifying METs having to do with DLA's responsibility to ensure a responsive depot distribution system and the provision of consumable items, Classes 1, 2, 3, 4, 8, and 9 to both the services and the combatant commanders for the duration of a war. The head of DISA is responsible for identifying METs having to do with the DISA responsibility to ensure the readiness of the Defense Communications System.
- All of the DoD component heads are responsible for identifying the readiness-related entities within their component, for ensuring that these entities are registered as measured units in ESORTS, for ensuring that each measured unit identifies its METs, and for ensuring that the systems and data necessary for measuring each unit's readiness by MET are made available.

Directive 7730.65 also establishes specific responsibilities for the OSD principals:

The Under Secretaries of Defense and the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) shall:

- *Review and provide oversight of those aspects of the component mission readiness reports that fall within the scope of their responsibilities.*
- *Approve readiness metrics and mission essential tasks in ESORTS for agencies under their auspices.*
- *Ensure deficiencies identified by the DRRS that fall within the scope of their responsibilities are addressed in program/budget planning and other DoD management systems.*

Given the above examples of DoD component readiness management and reporting responsibilities and the responsibilities assigned the OSD principals in Directive 7730.65, here are some examples of specific OSD readiness management and reporting responsibilities.

- Review the DoD component readiness reports to ensure the accuracy and completeness of all aspects of their reports that fall within the scope of responsibilities of the USD or the ASD (NII). For example, do the readiness reports from the DoD components, taken together, reflect the overall readiness of the Defense Transportation System to move the forces from their peacetime location to their wartime-required location—fort to foxhole? Are these reports consistent with their responsibilities as laid out in or implied by the DPG, CPG, TSCP, and the UCP, or in the OPLANs built by the combatant commanders?
- Ensure that the DoD components have included all of their readiness-related entities as measured units in ESORTS. For example, have the military

departments and defense agencies identified all of their installations and facilities that support the DoD communications, medical, transportation, training, logistics and distribution systems and included them in ESORTS? Have they ensured that all their readiness-related entities are included in ESORTS? Have they included essential commercial and DoD civilian entities?

- Ensure that the defense agencies under their control have identified a full set of METs based on their responsibilities laid out in or implied by the DPG, CPG, TSCP, and the UCP, or in the OPLANs built by the combatant commanders and the military departments?
- Ensure that readiness related entities that fall under the oversight responsibility of the USDs and ASD (NII) responsible for providing supplies and services to the military services and combatant commands know what is expected of them in a contingency or war. For example, do the service maintenance depots provide wartime requirements to the DLA for consumable items and to their vendors for maintenance services and supplies? Do CONUS hospitals know what is expected of them in a war? Do agreements exist to ensure access to foreign bases and support?
- Ensure that DoD-wide systems such as the transportation system and the supply, maintenance, and distribution systems that fall under the authority and responsibility of more than one DoD component head are ready for both peace and wartime operations.
- Ensure that readiness issues identified in the quarterly readiness reports from the DoD components are addressed by the appropriate DoD management system. For example, are materiel readiness shortfalls being addressed by the services and agencies in their POMs and Budgets? Are organizational issues and gaps in DoD-wide systems being corrected?

In addition to the DoD Directive 7730.65 establishing the Defense Readiness Reporting System, there is a DoD directive establishing the Senior Readiness Oversight Council (SROC).[3] This directive calls on the SROC to, "advise the Secretary of Defense on all matters pertaining to DoD readiness, oversee readiness-related activities, provide recommendations to the Secretary of Defense on readiness policy matters, and provide reports on current and projected readiness issues." The membership of the SROC includes the Deputy Secretary of Defense, who serves as its Chair, the Secretaries of the Military Departments, the Under Secretaries of Defense; the Chairman of the Joint Chiefs of Staff; the Chief of Staff, Army; the Chief of Naval Operations; the Chief of Staff, Air

3 DoD Directive 5149.2 dated July 2002.

Force; and the Commandant of the Marine Corps. This most senior DoD forum for addressing readiness issues receives the quarterly reports from the DoD components on their readiness to perform missions assigned by the Secretary of Defense. As members of the SROC, the USDs and the ASD (NII) have the responsibility to participate in all SROC activities and to oversee all quarterly readiness reports. Although not directly stated in the directive, in the context of that directive and of DoD Directive 7730.65, it is clear that it is the responsibility of the USDs to ensure that all readiness issues raised in the SROC that lie within their areas of responsibility are properly dealt with in the context of the PPBS or other DoD management systems.

The readiness management and reporting responsibilities described above were based exclusively on the duties and responsibilities identified in the DoD Directives 7730.65 and 5149.2. The actual readiness management and reporting responsibilities of the USDs and the ASD (NII) are even more extensive. This is because, in addition to the specific duties and responsibilities established in the two DoD directives, there is a body of laws and regulations that establish the full scope of duties and responsibilities of the OSD principals that, in the context of DoD Directive 7730.65, also have readiness management and reporting implications.

The table below contains a list of readiness management and reporting responsibilities of the USD (AT&L) and the OUSD (AT&L) that has been derived from an analysis of the laws and DoD Directives covering this office. Other OSD principals are very likely to have a similar list of readiness management and reporting responsibilities.

OUSD (AT&L) Readiness Management and Reporting Responsibilities

Logistics

- Management and policy oversight of all logistic, to include supply, maintenance and distribution, and materiel readiness aspects of DoD operations.
- Readiness of the Military services to ensure the availability and materiel readiness of weapons systems, equipment, war reserve stocks and unit supplies needed to support peace and wartime missions
- Readiness of the maintenance system, to include contractor provided services and supplies, in CONUS and overseas, to meet the needs of combatant commanders and services.

- Readiness of the DoD supply and distribution systems from factory to foxhole.
- Readiness of the Military services, the DLA, and contractor/vendor managed supply programs to provide Classes I, II, III, IV, XIII, and IX secondary items and Class V munitions.
- Materiel readiness of:
  - Peacetime operating stocks of critical Class IX spares and consumable items and other critical secondary items
  - Pre-positioned unit and bare base sets
  - Pre-positioned and swing WRM stocks of spares
  - Pre-positioned and swing stocks (WRM) for conventional ammunition and precision guided munitions
  - Pre-positioned and swing WRM stocks and unit supplies for chemical and biological defense and medical defense items
  - WRM and vendor managed inventories for medical supplies and equipment
  - Pre-positioned and swing WRM stocks of combat rations
  - Pre-positioned and swing WRM stocks and unit supplies for individual protection and troop support items
  - Bulk POL distribution, en route refueling and supply and POL WRM
- Readiness of
  - Bulk POL distribution and other energy sources
  - Land-based water resources needed to support contingencies
  - General support theater maintenance and intermediate maintenance
  - Military service depot maintenance capability and backlog
  - Contingency contracting
  - Host Nation Support (HNS) and mutual logistic arrangements
- Readiness of the DoD transportation system from fort/installation to foxhole to include:
  - Strategic airlift, and sealift
  - Power projection enablers such as containers, railcars, pallets, CHE/MHE, port operations, joint total asset visibility
  - The global transportation network

- Throughput enablers such as fuel, handling equipment, ramp space, port personnel, and JLOTS.
- Readiness to conduct air refueling, aero-medical evacuation, and intra-theater transportation

Installation management, military construction and environmental security

- Management and policy oversight of the DoD components to ensure all elements of the DoD infrastructure around the world are ready to provide needed support to forces in the conduct of their peace and wartime missions.
- Readiness of all DoD installations to include readiness-related leased facilities and those provided under mutual defense arrangements to perform peace and wartime tasks.
- Readiness to conduct wartime construction activities

Production

- Readiness of the U.S. defense technology and industrial base to: 1) supply and equip US forces, 2) sustain production, maintenance, repair, and logistics needed for military operations and 3) reconstitute the capability to develop and produce supplies and equipment.

Chemical and Biological Defense

- Oversight of overall DoD readiness to conduct chemical and biological defense operations.
- Readiness of U.S. forces to operate in a CB environment.
- Readiness of the Defense Logistics Agency to provide critical CB defense and medical defense secondary items and of the industrial base to produce those items
- Readiness of the Defense Threat Reduction Agency to perform METs in support of the combatant commanders, services and defense agencies

READINESS MANAGEMENT AND REPORTING ACTIONS THAT CAN BE TAKEN NOW

The Department of Defense is currently in the process of implementing the provisions of DoD Directive 7730.65. As the Defense Readiness Reporting System is gradually implemented and as improved readiness information becomes available, the OSD will be better able to exercise its readiness-related

responsibilities. In the interim, the OSD staff could take preliminary steps to meet these requirements in the course of its ongoing activities and initiatives:

- Ensure any reorganizations take account of OSD readiness responsibilities
- Participate in ongoing efforts to design and build the new DRRS.
- Take action to incorporate OSD readiness management and reporting responsibilities into ongoing initiatives

Chapter IV

ACHIEVING LINGUISTIC INTEROPERABILITY IN THE DOD
DEVELOPING A COMMON MISSION/TASK TAXONOMY

As part of our study of the military readiness reporting system, we found that the combatant commanders, services, and defense agencies understand and report readiness in significantly different ways.[1] One of the reasons for these differences is that, even though there is a DoD-wide CJCSI on readiness reporting and a joint definition of readiness, many components, and even different parts of the Joint Staff, have their own set of concepts and terms for understanding the meaning of readiness and for defining the jobs that the many organizations and entities within the DoD are responsible for performing. In the course of our investigation, we found no set of terms, no taxonomy, in universal DoD use that allowed for a common understanding of what readiness is or what the jobs of units and organizations should be called. One key to the IDA recommendations for the new readiness reporting system was the recognition that all readiness-related entities in the DoD need to report their readiness in terms that are common across the DoD.

This problem is not restricted to readiness reporting. Whether discussing readiness, training, planning, programming or transformation, the separate organizations in DoD employ numerous ways, i.e., different taxonomies, of describing what it is they do today or plan to do in the future. The existence of these different taxonomies leads to confusion throughout the DoD. This paper describes the main taxonomies in use within the DoD and argues that DoD should adopt a single taxonomy. Appendix B illustrates how a single taxonomy can replace the separate taxonomies to meet the needs of all DoD organizations

DOD ORGANIZATIONS USE MULTIPLE DEFINITIONS AND TAXONOMIES

Throughout the DoD there is great confusion about the words that should be used to describe the jobs that units, organizations, and DoD entities generally should be ready to do

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1 The Congress, in Section 361 of the National Defense Authorization Act for Fiscal Year 2000, directed the Secretary of Defense to provide for an independent study of the requirements for a comprehensive readiness reporting system (RRS) for the Department of Defense. The study was sponsored by the Office of the Under Secretary of Defense (Personnel & Readiness). See IDA Paper P-3569, *Independent Review of DoD's Readiness Reporting System*, Institute for Defense Analyses, November 2000.

today or that they should be preparing to do in the future. The basic confusion is about the meaning of the words: "task," "mission," and "capability."

There is no single DoD document that contains a definition of all three of these terms. The DoD Dictionary (DoDD), the repository of accepted joint definitions contains definitions of capabilities and of mission but not of task.

The Joint Training Manual for the Armed Forces of the United States, the basic, CJCS approved document that describes the policy for joint training includes definitions for the words task and mission but not of capability. According to this document, a task is "A discrete event or action, not specific to a single unit, weapon system, or individual, that enables a mission or function to be accomplished by individuals and/or organizations."[2] Both documents define a mission as "The task, together with the purpose, that clearly indicates the action to be taken and the reason therefore."[3] Taken together, these two definitions suggest that a task is a subset of a mission. However, a secondary definition muddles the issue by stating that a task may indeed be a mission—"In common usage, especially when applied to lower military units, a mission is a duty assigned to an individual or unit; a task."[4]

Capability is defined in the DoD Dictionary without reference either to the terms mission or task. According to the DODD, a capability is "the ability to execute a specified course of action."[5] Although the word capability is not directly tied to the word task, it appears reasonable to suggest that "a specified course of action" is equivalent to the word "task" and that a capability can be defined as the ability to perform a mission or a task.

As will be described below, the word "capability" is often used as a substitute for "task", or at least worded such that the words "capability" and "task" are essentially indistinguishable.

Adding to this confusion are the terms "Mission Essential Task" (MET) and "Joint Mission Essential Task" (JMET) that use two of the three words. The DoDD defines a JMET as "A mission task selected by a joint force commander deemed essential to mission accomplishment and defined using the common language of the universal joint task list in terms

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2 Joint Training Manual for the Armed Forces of the United States, CJCSM 3500.03, 1 June 1996. It is interesting to note that The Department of Defense Dictionary of Military and Associated Terms (JP 1-02) does not define "task."

3 The exact same definition for "mission" appears in The Department of Defense Dictionary of Military and Associated Terms (JP 1-02) 12 April 2001, p. 283.

4 Joint Training Manual for the Armed Forces of the United States, CJCSM 3500.03, 1 June 1996. Also in JP 1-02, p. 283. Another way of looking at this is that a task, derived from a mission, for one organization, may be assigned as a mission to a subordinate organization. This is nothing out of the ordinary from planning and operational doctrine.

5 JP 1-02, p. 62.

of task, condition, and standard." The key aspect of this definition is that it refers to a "common language of the universal joint task list." The DoDD does not define a MET.

The lack of a coherent approach to these three definitions in DoD policy documents and the DoDD, and the fact that the existing definitions of the terms task, mission and capability often leads to their use interchangeably is perhaps the basis for the confusion regarding use of the terms throughout the DoD.[6]

In addition to the confusion over the meaning and use of these three words, the services, OSD, and the Joint Staff tend to develop separate, but related taxonomies to assist them in their readiness reporting activities, in their planning and programming activities, and now in their transformational activities. Here is a list of the major taxonomies in use within the DoD today.

Designed Operational Capability (DOC)

Air Force units that currently report their readiness in the Global Status of Resources and Training System (GSORTS) are required to have a SORTS Designed Operational Capability (DOC) statement. One of the primary functions of this statement is to provide a narrative description of the wartime mission (or missions) for which a unit is organized or designed.[7] This description of the unit's wartime mission is written "using missions listed in the Air Force Task List (AFDD 1-1)."[8] It is a summary of the tasks that a unit has the capability to perform.

The Air Force separates many of its units into packets of personnel and/or equipment that are trained in order to perform a task or tasks. These packets, called UTCs (unit type code) are the basic building block the Air Force uses to source operational taskings received from the combatant commands. Each UTC has a "Mission Capability Statement" (MISCAP) associated with it. Among other things, the MISCAP "briefly explains mission capability."[9]

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6 A potential explanation for this may be the perception that different echelons of the DoD hierarchy "require" different labels to explain or describe the same thing. However, there really is no difference. For example, an Air Force fighter wing's mission may be to conduct air-to-air combat. The wing's various subordinate squadrons perform tasks (flying aircraft, maintaining aircraft, loading munitions, etc.). Although the squadrons perform "tasks" from the perspective of the wing commander, from the individual squadron commander's perspective, his unit is performing its mission (flying, maintaining, loading, etc.).

7 Air Force Instruction 10-201, *Status of Resources and Training System*, Secretary of the Air Force, 1 March 2000, p. 148.

8 AFI 10-201, p. 153. This is an obvious illustration of precisely the confusion that exists with terminology. Although the governing regulation states to use "missions" listed in AFDD 1-1, AFDD 1-1 actually lists "tasks."

9 Air Force Instruction (AFI) 10-244, *Reporting Status of Aerospace Expeditionary Forces*, p. 27.

Primary Mission Area (PRMAR)

Naval Warfare Mission Areas are major subdivisions of the Navy's functions of sea control, power projection, and strategic sealift. OPNAVINST C3501.2J, Naval Warfare Mission Capabilities & Projected Operational Environment (ROC/POE) Statements, defines the Navy's warfare mission areas and assigns mission areas to each of its operational units—ships, aircraft squadrons, communications stations, staffs, etc. A particular mission area that a unit must be fully capable of performing to carry out the wartime mission for which the unit is organized and designed is known as a Primary Naval Warfare Mission Area (PRMAR).[10] Mission areas in turn are sub-divided into operational capabilities (which in turn may have suboperational capabilities) that a unit must be able to perform/provide in support of its assigned mission areas.[11] For example, a unit assigned antisubmarine warfare as a PRMAR might have "Engage Submarines with Antisubmarine Armaments" as an operational capability, and a sub-operational capability of "Attack with Torpedoes."[12]

Required Operational Capability (ROC) Statement

The Navy uses a document called a ROC statement to inform units of their assigned naval warfare mission areas and the operational and suboperational capabilities they are required to provide. It is a "composite listing of all required operational capabilities for a class of ships, a type of aircraft squadron, or other unit, as assigned by the Chief of Naval Operations.[13] Essentially the ROC statement provides the commander a refinement of a unit's assigned PRMARs.

Joint Mission Essential Task (JMET)

The Department of Defense Dictionary defines a joint mission essential task as a "mission task selected by a joint force commander deemed essential to mission accomplishment and defined using the common language of the universal joint task list in terms of task,

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10 NTTP 1-03.3 (REV. A)(Formerly NWP 1-03.3), *Status of Resources and Training System Joint Report—Navy* (SORTSREPNV), p. 4-2.

11 For the Navy, mission areas and tasks are synonymous—NTTP 1-03.3 (Rev. A) states: "Unit status is an assessment of a unit's ability to perform specific tasks of war, known as naval warfare mission areas, under certain conditions." Ibid. p. 4-3.

12 NTTP1-03.3 (Rev. A), p. 4-2.

13 Ibid. p. 4-2.

condition, and standard."[14] It is important to note that this definition does not address the need to identify the DoD components or the units/entities whose collective job it is to perform a particular JMET.

Mission Essential Task (MET)[15]

Although there is not a direct definition of MET in the DODD, one can be inferred from the definition above of a JMET (without the reference to 'joint': "mission task selected by a commander deemed essential to mission accomplishment." Of the four services, only the Navy does not use the term MET with any regularity.

The Army defines a unit's METs as those tasks required to accomplish wartime missions, and uses the MET concept primarily to identify the major tasks for which a unit must train. Commanders determine their unit's METs by analyzing the assigned unit mission and identifying the critical tasks the unit must accomplish in order for its higher headquarters to successfully accomplish its own METs. Each unit's METs are reviewed by the higher commander to ensure that subordinate commanders have aligned their METs with the higher commander's mission. Thus, METs are "nested" in each echelon up the chain of command.[16] Army METs are drawn from the UJTL or from the associated Army task list.

The Air Force defines a mission essential task (MET) as a task that must be performed by an organization as a fundamental requisite for the performance or accomplishment of the organization's assigned mission. The Air Force goes on to state "An organization should have a limited number of METs. While all tasks performed…are important, most are performed to support or enable the essential tasks that are the reasons each particular organization exists. Keeping that in mind, it is possible to narrow down the list of METs to only those tasks that represent the indispensable tasks to that particular organization. A MET includes not only the task but also associated conditions and measures."[17] Approved AF METs are listed in the Air Force Task List that, as mentioned earlier, is the source document for the mission narrative portion of an Air Force DOC statement.

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14 The Department of Defense Dictionary of Military and Associated Terms (JP 1-02), 12 April 2001, p. 233.

15 The new DoD Directive on Readiness Reporting calls for all readiness related entities in the DoD to report their readiness to perform their METs in the new SORTS system. It also calls on the heads of DoD components to report the readiness of their organizations to perform the METs they have identified based on their analysis of missions assigned by the Secretary of Defense.

16 Army Field Manual 25-101, *Battle Focused Training*.

17 AFDD 1-1, p. 1.

The Marine Corps also uses the concept of METs. Every unit has a comprehensive set of generic tasks it is designed to accomplish. These tasks are described in the unit's Mission Performance Standards (MPS). METs are normally a subset of a unit's MPS.

Mission Essential Task List/Joint Mission Essential Task List (METL/JMETL)

A compilation of METs/JMETs that apply to a particular service or joint organization.

Joint Mission Area (JMA)

The Joint Staff Operations Directorate (J-3) developed the taxonomy of a joint mission area (JMA), defining it as a "functional group of joint tasks and activities that share a common purpose and facilitate joint force operations and interoperability."[18] In other words, a JMA is an aggregation of tasks essential for mission accomplishment.

Joint Warfighting Capabilities (JWC)

The Defense Planning Guidance prepared by the OUSD(P) lists a number of joint warfighting capabilities that it calls on the Department to develop as part of the capabilities-based approach to planning. These capabilities are deemed "necessary to deter and defeat adversaries who will rely on surprise, deception and asymmetric warfare to achieve their objectives."[19] The categories included under this heading include such items as strike, moving and sustaining the force, and training.[20]

Joint Core Competencies (JCC)

Recently, the Joint Staff Directorate for Operational Plans and Joint Force Development (J-7) introduced the concept of Joint Core Competencies (JCC).[21] JCCs are defined as "the essential set of integrated capabilities the Joint Force must demonstrate, through the synergistic

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18 Based on CJCS memo dated 6 Sept 2000, CM-1014-00.

19 *Defense Planning Guidance FY 2004-2009*, May 2002, p. 18.

20 It might appear that these JWCs are the same as the topics covered by the Joint Staff Joint Warfighting Capabilities Assessments (JWCAs) but this does not appear to be the case. There is no training JWCA, for example, and the focused logistics JWCA appears to be different from the moving and sustaining the force JWC.

21 The Air Force introduced the formal use of the term "core competency" in 1996 to describe those overarching tasks it performs "which naturally flow from the medium in which [the Air Force] operates and which enable it to execute its missions." (See AF Issues Book 1997). The other three services have begun discussing core competencies in their documents, but do not use them to the degree and with the fidelity that the Air Force does. See USMC *Strategy 21* and USN *Vision, Presence, Power*.

application of service capabilities, in order to achieve effects, objectives, and outcomes across the levels of war and the range of military operations."[22]

THE PROBLEM

A simple scan of the above listed "definitions" and taxonomies makes it obvious that organizations within DoD are using different definitions and taxonomies to describe essentially the same thing—

- An Army unit's METs are those **tasks** required to accomplish wartime missions.
- An Air Force DOC statement lists the major **tasks** that a unit is organized or designed to perform. A MISCAP does the same at a sub-unit level (the UTC).
- A Navy PRMAR is a particular mission area (specific group of **tasks**) that a unit must be fully capable of performing to carry out the wartime mission for which the unit is organized and designed. A ROC statement expands the PRMARs and is a composite list of all required operational **capabilities**
- Marine Corps units have an MPS, which is a comprehensive set of generic **tasks** the unit is designed to accomplish.
- METLs and JMETLs are compilations of mission essential tasks /joint mission essential **tasks**.
- A JMA is a functional group of joint **tasks** and activities.
- A JWC is a set of joint warfighting **capabilities**.
- JCCs are the essential set of integrated **capabilities** the Joint Force must demonstrate.

There are four primary conclusions that arise from this listing of definitions and taxonomies.

First, it is obvious that various entities at all echelons of the DoD make little actual differentiation between their use of the terms task, mission, and capability. In essence all three seem to be a description of the activities a unit performs, in accordance with the unit's reason for existence. This is true whether one is talking about a combatant command, a squadron, a battalion, a ship or an installation

Second, several terms exist to describe the combined list of a unit's tasks. Whether one calls this set of tasks a METL, a PRMAR, a DOC, a JMA, or an MPS, the reality is that the various taxonomies all describe the aggregation (at the appropriate echelon) of the tasks units perform or capabilities they provide.

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22 Joint Staff (J7) information paper dated 5 Feb 2002.

Third, the confusion over definitions and the use of multiple taxonomies will confuse and disrupt DoD efforts to build the DRRS.

Fourth, the fact that the Department has taken so many different approaches to describing what it does means that the combatant commanders have no standard way to understand what it is that the services, agencies, and supporting combatant commands do, or to efficiently integrate their contributions.

A POTENTIAL SOLUTION

The various taxonomies described here have one thing in common—they are all based on an understanding of the task that needs to be performed—regardless if the task is performed by a combatant commander or an Army infantry squad. It seems logical, therefore to use the concept of task as the central organizing principle throughout the DoD. This step has already been taken in the joint training arena.

In 1994 the Joint Staff Directorate for Training (J7) developed the Joint Training System (JTS). The JTS uses the term JMET in all documents related to the description and implementation of the Joint Training System. Linked to the JMETs are the Universal Joint Task List[23] and associated service task lists. These task lists are intended to list every task and sub-task that might need to be performed by military forces, from the combatant command level to the unit level. According to the director, J7, "The UJTL serves as a common language and reference system for joint force commanders, operational planners, combat developers, and trainers. The UJTL describes what tasks are to be performed in terms common to multiple combatant commands and joint force components."[24] The Joint Training System and the Universal Joint Task List are approved by the Chairman, Joint Chiefs of Staff, and agreed to by all of the services.

There is absolutely no difference between a JMETL and a METL except for the organizational level (context) at which either term is used (joint versus service). The same holds true for the UJTL. As one goes up the organizational hierarchy, the tasks listed in the UJTL rise from tactical to operational to theater to national. Essentially, this same thing is done by the organizations in the various taxonomies. For example, a PRMAR is sub-divided into operational and sub-operational capabilities (tasks) as one descends the Navy's organizational chain; a JMA

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23 JP 1-02, p. 458 defines the *Universal Joint Task List* as "A menu of capabilities (mission-derived tasks with associated conditions and standards, i.e., the tools) that may be selected by a joint force commander to accomplish the assigned mission. Once identified as essential to mission accomplishment, the tasks are reflected within the command joint mission essential task list."

24 The Joint Staff, J7, *The Joint Training System, A Primer for Senior Leaders*, 1998, p. 12.

is a functional group of tasks—joint tasks that are performed by a joint organization at the higher echelons and by service-specific units at the lower organizational levels.

RECOMMENDATION

The profusion of taxonomies detailed above leads to confusion rather than clarity. The DoD should institute use of a single taxonomy that is sufficiently flexible to cover all DoD activities, operational and program/budget, at every level, from basic units to entire components, within the entire DoD. The only taxonomy with the flexibility and depth to meet this goal is the MET/JMET/UJTL taxonomy.[25] The UJTL and the associated service task lists are designed to cover the entire spectrum of tasks that are performed by the DoD. In fact, all DoD organizations already develop task lists in response to the Chairman's direction that "…commanders [are required] to examine their missions and document their command warfighting requirements based on the tasks in the Universal Joint Task List."[26] The use of MET and JMET/METL and JMETL is already mandatory in the training context, there is no reason it cannot be made mandatory across all DoD activities. The use of a single taxonomy would simplify DoD operations and reduce the current confusion that exists in OSD, the Joint Staff, the services, the combatant commands, and the defense agencies.

Although the use of a single taxonomy such as that represented by the UJTL and the service task lists would be an improvement on the current situation, the existence of the UJTL, three service task lists, and, in the near future, as many as nine defense agency task lists unnecessarily complicates life for the combatant commander who must make sense of the contributions of all of these organizations. Chapter IX addresses this issue and concludes that all the task lists should be consolidated into a single Universal Task List.

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25 Appendix B, "Transitioning to "MET" Taxonomy," illustrates how this taxonomy can replace the separate taxonomies outlined above and meet the needs of all DoD organizations.

26 CJCSI 3500.01B *Joint Training Policy*, p. A-1.

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Chapter V
AIR FORCE READINESS REPORTING IN ESORTS

The recently released readiness reporting guidance from the Secretary of Defense mandates that all DoD components report their readiness to perform missions assigned by the Secretary of Defense in terms of mission essential tasks (METs) and that all readiness-related entities under their control are included as measured units in the Enhanced Status of Resources and Training System (ESORTS).[1] The Directive allows for "MET-like constructs" such as USAF Designed Operational Capability (DOC) statements.

Air Force units that currently report their readiness in the Global Status of Resources and Training System (GSORTS) are required to have a Designed Operational Capability (DOC) statement on which their GSORTS report is based. One of the primary functions of this statement is to provide a narrative description of the wartime mission (or missions) for which a unit is organized or designed.[2] This description of the unit's wartime mission is written, "using missions listed in the Air Force Task List (AFDD 1-1)."[3]

The DOC statement contains a list of the capabilities the unit is to provide—this list of capabilities is exactly equivalent to a list of tasks the unit is to be able to perform. Historically, units reported readiness to perform these tasks (as described in the mission description in the DOC statement) in the aggregate (i.e., the unit did not report by individual UTC). However, since it is the individual UTCs that actually provide the capabilities to perform the tasks "assigned" to a unit, there is no reason why Air Force readiness reporting cannot be done on the basis of UTCs and their respective tasks. This

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1 USD (P&R), DoD Directive 7730.65, *Department of Defense Readiness Reporting System*, June 3, 2002.

2 Air Force Instruction (AFI) 10-201, *Status of Resources and Training System, Secretary of the Air Force*, 1 March 2000, p. 148.

3 AFI 10-201, p. 153. Air Force Doctrine Document (AFDD) 1-1 complements CJCSM 3500.04C, *Universal Joint Task List* (UJTL), 1 July 2002 by providing Air Force specific tasks. Although the regulation states to use "missions" listed in AFDD 1-1, AFDD 1-1 actually lists "tasks." This illustrates the confusion that exists with terminology in DoD.

paper discusses UTCs and describes conceptually how the Air Force can meet this SecDef requirement by moving away from sole reliance on the DOC and reporting readiness in the new Defense Readiness Reporting System in terms of UTCs and mission essential tasks. This paper also describes how units that do not have UTCs, or units that have additional mission essential tasks that are not covered by UTCs can report in ESORTS.

WHAT ARE "UTCS"?

The Air Force uses the acronym "UTC" throughout its planning and readiness processes and literature. UTC stands for "unit type code." UTC designations serve two purposes. The first purpose is to designate unit types. These designations are not unit-unique. All units of a given type share the same designation. For example, all Civil Engineer Squadrons share the designation 4F7AA. This is true for units that currently have a mobility mission as well as for those units that do not. These UTCs (termed "in-place UTCs") are used primarily for administrative purposes. These UTCs have neither mission capability statements nor resource details associated with them.

The second use of the term UTC is in some ways a misnomer, because here the term UTC is not used solely to designate the type or kind of "unit" where "unit" is used in the traditional sense (for the Air Force, a squadron) of an organization with a formal structure and an assigned commander. In this context, it is more correctly termed a "mobility UTC." A mobility UTC is used to designate a deployable packet of personnel and/or equipment that provides a capability to perform a task or tasks.

This capability, singularly or in combination with other capabilities (from other mobility UTCs) enables a commander to accomplish a task or tasks. In other words, a mobility UTC is a task-organized entity, provided by its "parent" squadron, providing a capability to perform one or more METs.[4]

In this regard, a mobility UTC is the basic building block the Air Force uses to source operational (deployment) taskings received from the combatant commands. Unlike the other services, the Air Force seldom deploys an entire unit, i.e., squadron, on an operational mission. Instead, the Air Force draws packets of people, equipment, and

[4] The squadron commander can therefore be thought of as a "force provider"—a UTC being the force provided.

supplies from existing units in order to construct a tailored organization capable of performing the tasks identified for the specific mission.

For example, a representative Airlift Control Squadron (ALCS) has six primary mobility UTCs that the squadron commander is responsible for organizing, training and equipping.[5] These six are (with numerical designation):

1) Tanker Airlift Control Element (TALCE) (7E1AE)

2) Mission Support Team (MST) (7A1AF)

3) Communications Support Team (CST) (7E1CA)

4) TALCE operations center (7E1BC)

5) Bare Base Living Quarters (7E1BD)

6) TACP Airlift Liaison Officer (ALO) (7FVUNO).

It is important to note that mobility UTCs are not unit unique, either in title or designation: Any airlift control squadron in the Air Force may have this same list, a portion of it, additional UTCs, or some other UTCs that it is responsible for providing. There is no standard size for mobility UTCs. For example, the representative squadron has one UTC (7FVUNO) that consists of one Air Force captain, and another (7E1AE) with 3 officers and 8 enlisted (11 total) personnel. Nor is there any standardization between unit types. The ALCS has six assigned UTCs, while a transportation squadron has a total of 59 individual UTCs.[6] Finally, a unit's UTCs are not necessarily designed to be mutually exclusive—a person or piece of equipment can be allocated or assigned to support multiple UTCs. The assignment of an individual or a piece of equipment to multiple UTCs obviously precludes concurrent tasking of the affected UTCs.[7]

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5 This paper uses the 463rd Airlift Control Squadron (ALCS) as a representative example. The 463rd has recently been deactivated as part of an Air Force consolidation of airlift control squadrons. However, the information attributed to the squadron is still valid for the illustration purposes of this paper.

6 There are actually only 13 **different** mobility UTCs for the 314 Transportation Squadron (TS). There are multiple requirements for several of the UTCs. For example, UTC UFBLA is an equipment packet consisting of 1 forklift. The 314 TS is tasked to supply 8 separate UFBLA UTCs.

7 For example, the ALCS' six UTCs listed above are designed for concurrent tasking. The squadron is also assigned three additional UTCs it must be prepared to provide. However, the Air Force formally acknowledges in written guidance that deployment of these UTCs will have an adverse impact on the other six.

As mentioned, mobility UTCs provide capabilities to accomplish one or more tasks. Each mobility UTC has a "Mission Capability Statement" (MISCAP) associated with it. The MISCAP "describes significant employment information, briefly explains mission capability, the types of bases to which a UTC can be deployed, and all pertinent personnel substitution rules."[8] The MISCAP, like the DOC, is written in terms of the Air Force Task List. MISCAPs for three UTCs from the representative airlift control squadron follow:

- 7E1AE—Mobility C2 TALCE MOG 12 or Less
- UTC contains manpower and equipment. Manages, monitors and controls aircraft ground ops for activities reflected in the title. Capable of sustained AMC mission support operations for operations greater than 90 days. Requires BOS. Capable of operating at MB, LB, SB and BB.[9] Use UTC 7E1AN for aircrew stage. Use UTC 7E1CA or 7E1CB for comm. Use UTC 7E1BD and 7E1BC for BB ops. Manning reflects total direct requirements regardless of in-place-personnel. Capable of sustained 24-hour-a-day ops. Tanker and airlift officer AFSC 11XX, 12XX, and 13XX interchangeable regardless of suffix. AFSC 1C3X1 may be substituted for 1C0X1, 3S0X1 for 3A0X1, and X1A0X1 for X1A2X1. All personnel must meet TALCE qualification standards IAW AMCR 55-2 vol. IV. This is a direct combat support deployed command and control UTC.
- 7E1AR—Mobility C2 Element TALCE Command Support Staff
- UTC contains manpower only. Manages TALCE command and staff ops for activities reflected in the title. Provides TALCE/BOS management support for operations greater than 30 days. Requires BOS. Capable of operating at MB, LB, SB, and BB. Use UTC 7E1AE for C2, UTC 7E1CA/7E1CB for comm. Use UTC 7E1BD/7E1BC for BB ops. Manning reflects total direct requirement regardless of in-place personnel. Tanker and airlift officer AFSC 11XX, 12XX, and 13XX interchangeable regardless of suffix. AFSC 1C3X1 may be substituted for 1C0X1, 3S0X1 for 3A0X1, and X1A0X1 for X1A2X1. All personnel must meet TALCE qualification standards IAW AMCR 55-2 vol. IV. This is a direct combat support deployed command and control UTC.
- 7E1BD—Mobility C2 Element Bare Base Living Quarters 50 max
- UTC contains equipment only. UTC designed to provide bare base living quarters, rations, water, fuel, electrical power, and sanitation facilities for a maximum of 50 TALCE personnel. UTC may be used to support any TALCE 7EXXX series UTC. Capable of operating at MB, LB, SB and BB locations.

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8 Air Force Instruction (AFI) 10-244, *Reporting Status of Aerospace Expeditionary Forces*, p. 27.

9 **M**ain **B**ase, **L**imited Operating **B**ase, **S**tandby Deployment **B**ase, **B**are **B**ase.

This UTC is capable of self-support ops of 5 days or less. This UTC must be resupplied for sustained ops greater than 5 days.

TRADITIONAL UNIT READINESS REPORTING

Historically, Air Force unit readiness reporting has been by squadron rather than by individual UTC; a squadron (in most cases) was the lowest organizational level that reported the status of personnel, equipment, equipment condition and training. An Air Force unit compiles its readiness report in relationship to its respective DOC statement. The Status of Resources and Training System (SORTS) DOC Statement (AF Form 723) lists both the resources a unit is required to provide and most importantly, "a summary of the mission for which a unit is organized or designed (or equipped, when tasked)."[10] The ALCS' DOC statement contains the following mission description:

> "This unit has a wartime mission to: Deploy trained and equipped personnel and serviceable equipment as the deployed command and control C2 element of AMC's Tanker Airlift Control Element (TALCE), to establish, augment, or sustain command, control, and mission support for strategic and theater mobility forces supporting global reach laydown for war, contingency, operations or AMC-directed missions. Plan, coordinate, and conduct onload, offload, en route mission support, and air refueling coordination for tasked operating locations. Provide and maintain secure and non-secure communications in support of TALCE C2. Deploy mission support forces to specified locations as tasked by HQ AMC TACC and/or (if deployed) the Air Mobility Element (AME) managing TALCEs deployed within their area of responsibility (AOR). Provide air mobility liaison to US Army units specified in the AMC/ACC/FORSCOM/TRADOC Memorandum of Agreement."[11]

DOCs versus MISCAPs

A quick comparison of the respective definitions of a 'mission description' contained in a unit DOC Statement and a UTC MISCAP show there are essentially the same thing, only written for different levels of the unit hierarchy. The purpose of the DOC Statement is to provide "a summary of the mission for which a unit is organized or designed."[12] "Similar words describe the purpose of the MISCAP: "to provide a brief

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10 Air Force Instruction (AFI) 10-201, *Status of Resources and Training System*, 1 March 2000, p. 148.

11 HQ AMC (DOOR) message 092199Z Apr 97 "SORTS 463 ALCS DOC Statement."

12 AFI 10-201, p. 148.

description of the capability for which the UTC is designed."[13] Although one definition talks about 'design mission' while the other says 'design capability,' they both are talking about the same thing. The only essential difference is the organizational level in question and the specificity of the mission/task for which capabilities exist—the unit, vice a subset of that unit. Again using the 463 ALCS as an example, we can compare the wording of the squadron's DOC statement with two of the squadron's UTCs. The DOC assigns the mission of establishing, augmenting or sustaining command, control and mission support; the MISCAP for UTC 7E1AE includes the words manage, monitor and control…capable of sustained mission support operations. The DOC further calls for the 463d to provide secure and non-secure communications; the MISCAP for UTC 7E1CA states that the Mobility Air Reporting and Communications (MARC) system deploys to support TALCE ops.

In both DOC statements and MISCAPs, the Air Force seems to use the words capability and mission interchangeably. If one accepts that capabilities allow tasks to be completed, that missions are essentially comprised of a series of tasks, and that one level of command's mission is another level's task, then it is irrelevant which term is used. Reviewing the actual wording of the 463 ALCS' DOC statement and its component UTC MISCAPs indicate that these are actually lists of 'tasks' that the unit/UTC is designed to perform. For example, the DOC uses the verbs plan, coordinate and conduct; one of the MISCAPs contains the verbs manage, monitor and control. Although some may view these as mission statements and others may view them as statements of capabilities, they are all in essence ways to describe a task—to do something.[14]

CURRENT READINESS REPORTING

The Air Force system of designating its deployable components as UTCs created a conceptual disconnect. The Air Force reports unit-level readiness into the Global Status of Resources and Training System (GSORTS) most often using the "squadron" as the smallest organizational entity, while mobility UTCs are the entities the Air Force plans to deploy in the context of both deliberate and crisis planning, as well as in the context of the Air and Space Expeditionary Task Forces.

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13 AFI 10-244, p. 13.

14 AFDD 1-1 has codified this relationship. To illustrate, the seven AF core competencies (overarching capabilities) "are expressed as Air Force tasks when…the verb "Provide" [is] placed in front of each competency." (p. 19).

As the Air Force implemented its Expeditionary Aerospace Force (EAF) concept and began presenting tailored forces to theater commanders as Air and Space Expeditionary Task Forces (ASETFs) comprised of some combination of modular, scaleable UTCs, the Chief of Staff of the Air Force recognized the disconnect and saw the need to address readiness not only at the unit (squadron) level but also at the mobility UTC level. Initially, the Air Force attempted to use the existing SORTS reporting tool, but determined that it was incapable of capturing the requisite data since it was designed for the unit level and therefore did not provide visibility into the packets (mobility UTCs) that make up the basic building blocks for sourcing requirements.[15] Since GSORTS did not meet Air Force needs, the AEF Center developed a new reporting system, the "AEF UTC Reporting Tool (ART)." Simply stated, the ART is a method of identifying a UTC's ability to perform its MISCAP and of identifying resource shortages. It also provides planners the ability to understand the current status of a UTC prior to tasking that UTC in support of a mission.[16] The ART does not replace, but rather is in addition to current (i.e. traditional) SORTS reporting.[17] The ART implementing instruction states:

> "ART focuses reporting on the modular scalable capability-based UTCs designed to meet the needs of the 21st century force while SORTS is unit-centric with reporting based on major war (MW) commitments…Readiness assessments for MW and AEF tasking must be considered together, however, the reporting guidelines for each may be independent. A unit's C level as reported in SORTS may not directly correlate to it's ability to support a specific UTC tasking as indicated in ART."[18]

Instructions for using the ART state that unit commanders are to "rate each UTC against the unit's current ability to deploy and employ the UTC."[19] In other words, the

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15 AEF Center briefing, *AEF UTC Reporting Tool (ART) TRAINING FOR COMMANDER'S: Wing, Group, Squadron or Equivalent*, undated.

16 Ibid.

17 This implies a greater reporting workload for the commander, since UTCs must be assessed and updated within 24 hours of a status change or at least every 30 days. (Ibid.) As will be shown in the next section, ESORTS will reduce the commander's workload.

18 AFI 10-244, p. 6. This means that a squadron may report less than fully ready in GSORTS, but be ready to deploy some or all of the UTCs that comprise less than the full squadron.

19 AFI 10-244, p. 13.

commander is to rate the readiness of each packet of personnel and equipment that comprise each assigned UTC to complete its task(s).[20]

FUTURE READINESS REPORTING

One of the major differences between the current GSORTS and the coming ESORTS is that ESORTS requires every measured unit to report its readiness to perform its assigned mission essential tasks (MET) and to do so in terms of output (work performed).

The Air Force developed ART from the recognition that squadron-level readiness reports, i.e., GSORTS, were insufficient for Air Force use; knowledge of the readiness of UTCs was critical. This is exactly the problem that ESORTS is designed to correct. Hence, the concept that drove the creation of the ART is directly transferable to ESORTS. In simplest terms, commanders responsible for providing UTCs report in the ART the readiness of each packet of personnel and equipment that comprise each assigned UTC to complete its task or tasks. Thus the ART reflects the overall readiness of the UTC in the same way that GSORTS reflects the overall readiness of a GSORTS measured unit. In fact, since the ART already is similar in many respects to the ESORTS concept, and both are written in terms of the Air Force Task List, it will be easy for the Air Force to transition from the ART to ESORTS.

Tracking and reporting the readiness of UTCs in the ESORTS framework raises two issues that will need to be resolved as the ESORTS concept is implemented.

1) UTCs in ESORTS can be conceptually dealt with in two ways. One, ESORTS can show the readiness of a squadron (measured entity) in terms of the UTCs it is supposed to provide—in other words, these UTCs are equivalent to the squadron's METs. The other possible approach is to define a UTC as a "measured entity" in its own right, one that has its own METL and associated resources and training metrics. Either way is both doable electronically and consistent with the ESORTS concept and framework.

2) The Air Force currently has nearly 40,000 UTCs. This is a direct result of the Air Force deployment management philosophy outlined briefly above. Which UTCs to include in ESORTS is a direct function of 'mission-essentiality'. These UTCs vary in size—some are nearly

[20] However, currently the ART, again like GSORTS, does not include the readiness to perform each individual task that is described in the MISCAP (or the DOC statement in the case of GSORTS).

> equivalent to a squadron, while a large number of others consist of only one to three persons, or individual pieces of equipment. Whether or not a UTC in itself is "mission essential" is totally independent of its size. One must look at the capability the UTC provides to determine value.

For example, UTC 1SAB1 is a single Space Weapons Officer. This officer is the "space expert in an AOC or JTF, provides space expertise in all DoD, national, civil and commercial space systems and provides expertise and support to CSAR ops, theater missile warning, GPS and guided munitions considerations, vulnerability to foreign space systems, planning exploitation of us space systems, and coordinating specialized space support." Another example is UTC 3FQDU. This is a five-officer UTC tasked to "provide aircrew augmentation to enable an F-15C/D squadron to meet wartime activity rates." A third example is UTC UFBLD. This UTC is a single piece of equipment, namely a 25K loader that enables the loading of cargo onto AMC aircraft that in the Air Force concept may be the only loader deployed to a small airbase.

In none of these three examples can one claim that small size equates to the UTC being non-mission essential—the AOC or JTF requires space expertise; the F-15 squadron requires personnel augmentation; loading and unloading cargo requires a certain piece of equipment.

The Air Force clearly needs to internally track the readiness of each designated UTC to perform its tasks —this is the driving basis for developing the ART. Whether or not this Air Force-need should be transferred directly to ESORTS is open for discussion. ESORTS, with its inherent power, can be adapted to accommodate any decision made.

While acknowledging that ESORTS serves a wider audience than the Air Force alone, it should still be responsive to Air Force needs, as well as those of the combatant commanders and senior DoD decision makers. ESORTS can display the readiness status of UTCs to accomplish the tasks a combatant commander is interested in using one methodology (for example, rolled up into the readiness of a larger entity, such as an AEF), while a different view can display that same readiness in a view looking at the Air Force organizational hierarchy. A combatant commander may want to look at one level of aggregation and the Air Force managers at another. ESORTS can do both.

Unlike the ART, which does not provide for aggregating UTCs into AEF METs, ESORTS will provide commanders at succeeding hierarchical levels, including the AEF, direct knowledge of the readiness status of each subordinate organization's METs. For

example, the readiness of an AEF to perform a MET associated with strike operations is based on the readiness of multiple UTCs. Commanders will be able to use ESORTS to view their organization's readiness to perform it's MET(s) by "rolling up" the data of the specific UTCs that enable each MET. It should be up to Air Force Major Commands to define the standards for the METs of each subordinate organization, as well as to define the "weight" given to various resource and training categories, UTCs, and METs as they "roll up" into the superior organization's own METs.[21]

Figure V-1 illustrates how ESORTS might display the readiness status of each MET for every Measured Unit, in this case, down to the individual UTC. Any organization, from DoD, through Air Mobility Command, to UTC UFBBS from the 730th Air Mobility Squadron can be selected and its corresponding METs, in terms of output standards can be displayed.[22]

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21 According to AFDD 1-1, "The MAJCOM commander approves the standards set for the performance of the tasks when he approves the METL." (p. 1).

22 For example purposes, the Task ID is notional. The task is drawn directly from the UTC's MISCAP. It reads in full: SUPPORT AERIAL PORT FUNCTIONS IN A UNIT MOVE OPERATION FOR A 12-HOUR MOG OF 2, OR 24 HOUR MOG OF 1.

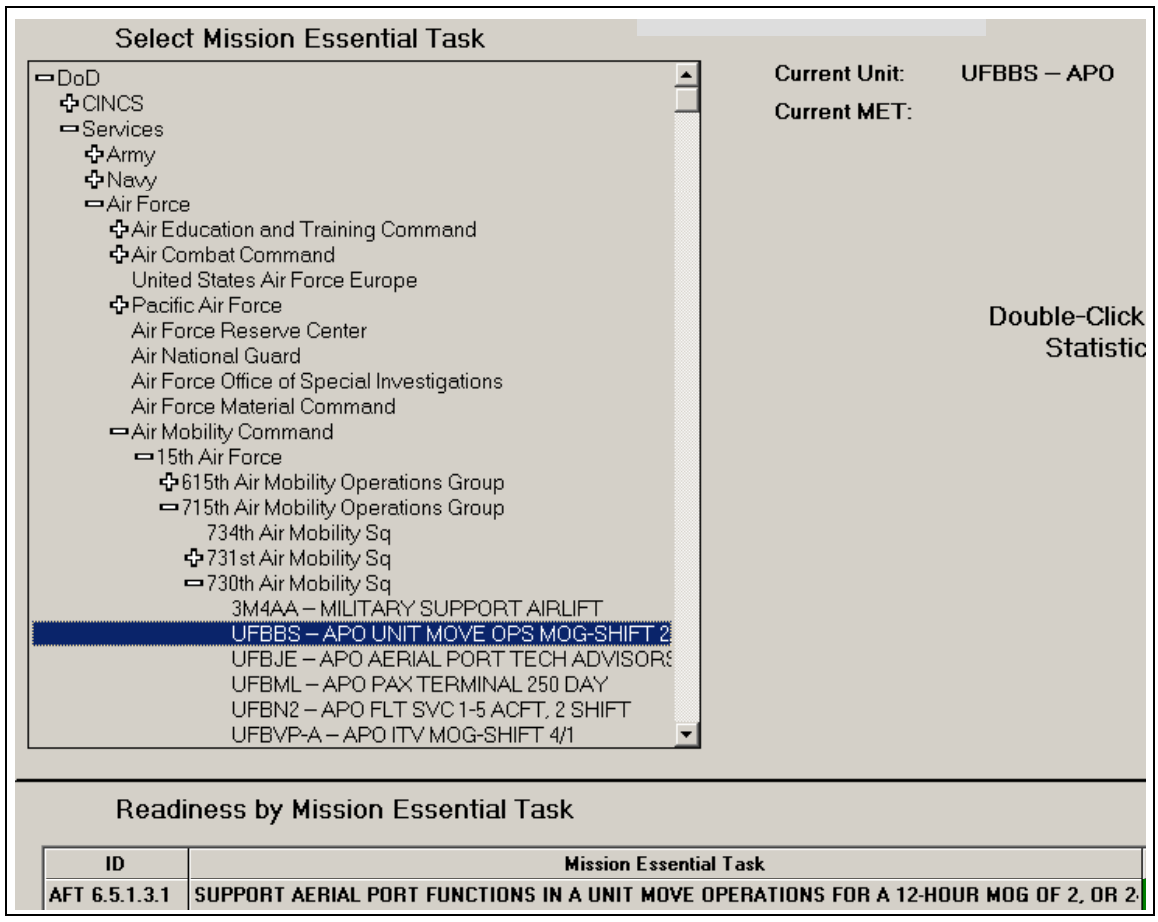

Figure V-1. ESORTS Can Provide A Report By Unit and By Task[23]

23 These screen shots are taken from the IDA ESORTS prototype that is available on request.

Figure V-2 shows another view of similar data, although this time sorted by the METs of a Combatant Command. The organizations responsible for performing MET AFT 6.5.1.3 (Perform Air Mobility Support) are listed. As with the "unit look" (Figure V-1), the same type of information is available at any and all levels of the MET hierarchy.

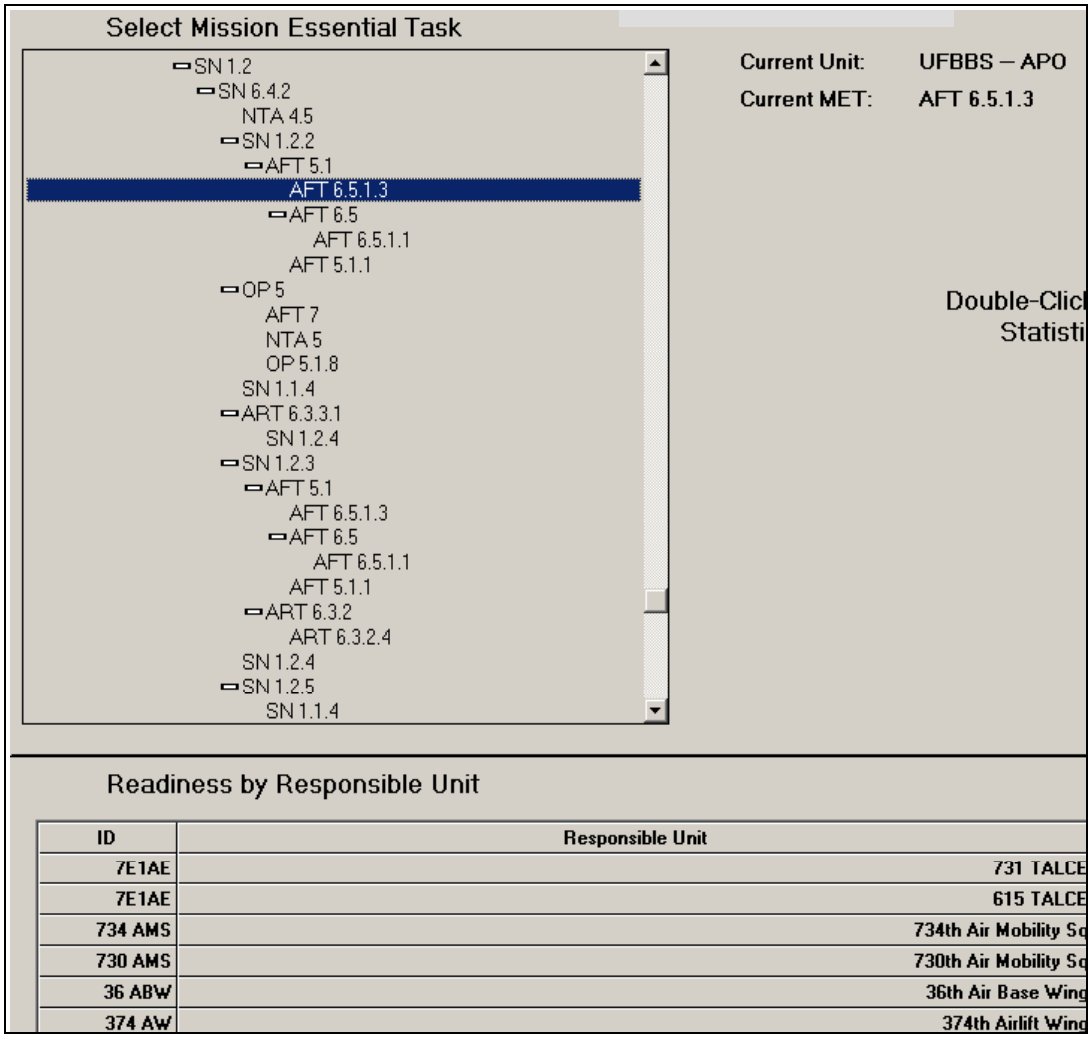

Figure V-2. ESORTS Can Provide A Report By OPLAN

The very nature of ESORTS will provide Air Force commanders at all levels greater and deeper visibility into the readiness of Air Force organizations at all levels. ESORTS will also enhance the efficiency of joint deliberate and crisis action planners in two ways. It will show the capabilities the Air Force can provide a combatant commander. It will also show the Air Force's readiness to provide those capabilities.

Table V-2 uses the information from the 463 ALCS to illustrate how such a readiness-reporting matrix could look in a prototypical ESORTS matrix. As one can see, each UTC has one or more tasks that it enables or performs. The ALCS, in turn has METs that reflect its mission—to provide the UTCs to the combatant commander. The other two squadrons in the 463 Airlift Group—the 50th & 61st Airlift Squadrons, would obviously have their own entries in the complete system. As one continues up the chain of command, each succeeding level could view its own METs and its subordinate organizations in the same manner.

Although it is important to understand the role of UTCs in the future DRRS, it is also important to note that the future DRRS requires all readiness-related entities in the Air Force to be included as measured units in ESORTS and to report their readiness to perform their mission essential tasks. Some Air Force units are responsible simultaneously for providing mobility UTCs and for other tasks that are essential to their missions. However, a unit's homestation mission (whether or not it is also responsible for providing deployable forces) to organize, train, equip, provide infrastructure, prepare for mobilization, etc., is as vital to supporting a combatant commander as are the tasks performed by the deploying UTCs. Since the DRRS calls for non-deploying mission essential operational and support units to be included in ESORTS, the Air Force will need to modify its current procedures and include these units as measured units in ESORTS. This includes units that are primarily civilian such as repair depots. This would also help Air Force leaders focus on Air Force-wide resource issues.

IMPACT ON THE AIR FORCE

The DRRS has changed the construct for reporting readiness, from a simple statement of the overall status of resources and training, to one specifically oriented to the tasks organizations perform that are essential to the missions the organization is assigned. The new Air Force system for reporting the readiness of individual UTCs, the ART, is an important intermediate step forward in implementing the DRRS. Development and full implementation of ESORTS will further expand on the fidelity that the ART provides and will enhance the availability of readiness information for the entire DoD chain of command, from the squadron commander to the Secretary of Defense. ESORTS will allow the Air Force to see the readiness of each mobility UTC in terms of its METs. It will also allow the Air Force to see the readiness of a unit to perform its homestation mission. It will provide the Air Force a tool for reporting the readiness of ad hoc task

forces. Finally, it will show the readiness in terms of METs of units that are not tasked to provide mobility UTCs.

Table V-2. Example ESORTS Report[24]

TASK	UTC	TASK	P S E E C T
USTRANSCOM			
AMC			
21 AF			
463 AG			
50 AS			
61AS			
463 ALCS		** = secondary MET; entails adverse impact on primary METs*	
		MET 1 Deploy Tanker Airlift Control	
		7E1AE Tanker Airlift Control Element	
		MET 1 Provide command and control of airlift	
		MET 2 Supervise aircraft handling	
		MET 3 Manage mobility processes	
		MET 2 Deploy Mission Support Team (MST)	
		7A1AF Mission Support Team (MST)	
		MET 1 Provide command and control of airlift	
		MET 2 Supervise aircraft handling	
		MET 3 Manage mobility processes	
		MET 3 Deploy two Communications Support Teams (CST)	
		7E1CA Communications Support Team (C	
		MET 1 Provide secure & non-secure satellite, ground-to-air, and ground-to-ground voice & data communications	
		MET 4 Deploy TALCE operations center	
		7E1BC TALCE Ops Center	
		MET 1 Provide soft-wall air operation center workspace	
		MET 5 Provide Bare Base Living Quarters	
		7E1BD Bare Base Living Quarters	
		MET 1 Provide Bare Base living quarters for a maximum of 50 TALCE personnel	
		MET 6 Provide two air mobility liaison cells	
		7FVUNO TACP Airlift Liaison	
		MET 1 Conduct airlift liaison with army units as member of	
		*** MET 7 Provide TALCE/MST C2 Element**	
		7E1AD TALCE/MST C2 Element	
		MET 1 Manage, monitor and control mission-support forces	
		*** MET 8 Provide Load Planning Team**	
		7E1AQ Load Planning Team	
		MET 1 Provide on-site contingency load planning and assist	
		MET 2 Conduct mobile "equipment preparation" and "airlift load planners" courses for Army personnel	
		*** MET 9 Provide Airfield Survey Team**	
		7E1AP Airfield Survey Team (AST)	
		MET 1 Conduct airfield and site surveys to assess airfield capabilities	

24 The METs were derived from the MISCAPS for each of the UTCs. The reporting categories (**P**ersonnel, **S**ustainment, **E**quipment, **E**quipment **C**ondition, and **T**raining) would have appropriate entries. The Air Force will need to address during on-going ESORTS development the best method to highlight how and when the adverse impact caused by the secondary METs (denoted by an asterisk in the table) can occur.

Chapter VI
LINKING ESORTS AND JTIMS[1]

The purpose of this chapter is to describe the potential linkage between the IDA concept of ESORTS and the existing Joint Training Information Management System (JTIMS) that has been developed by the Joint Staff (J-7) and the ODUSD (Readiness) to support the Joint Training System. In the absence of a working version of ESORTS we compared JTIMS with a prototype version of ESORTS developed by IDA.[2] The screenshots shown in this chapter are taken from the IDA ESORTS prototype or from JTIMS. For example, Figure VI-1 shows a screen set from the ESORTS prototype. This screen displays XVIII Airborne Corps information and data.

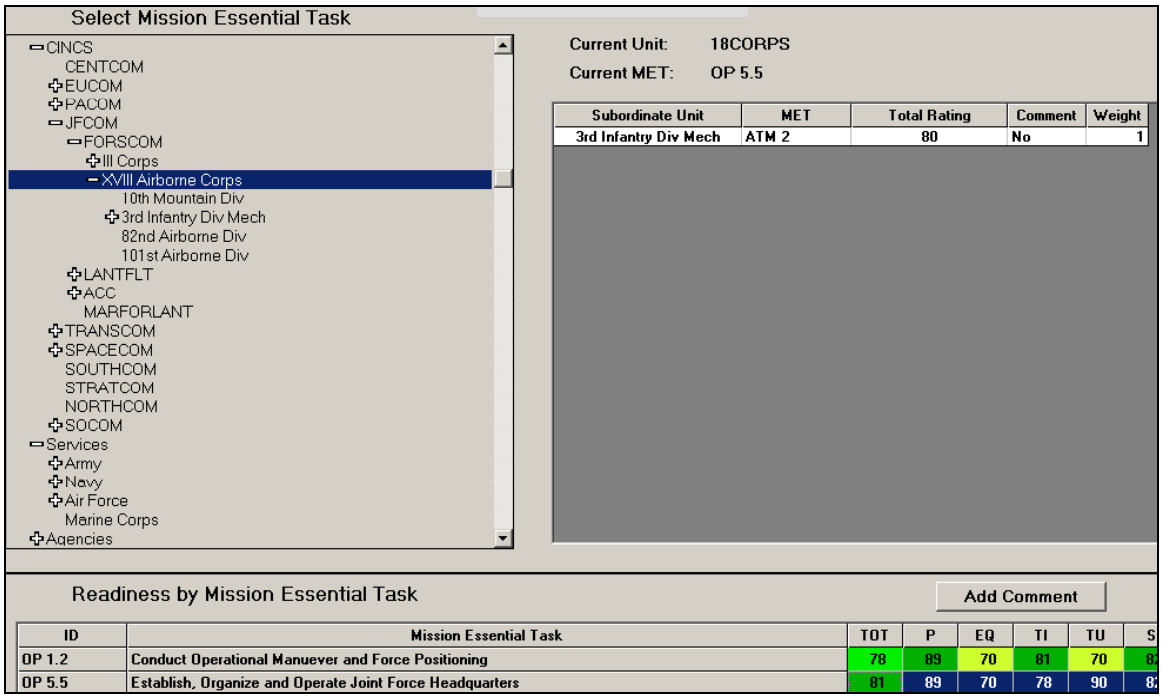

Figure VI-1. IDA ESORTS Prototype Screen

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1 This chapter is based on the work product of Mr Harry Rothmann and other members of the Dynamic Research Corporation under contract to IDA in response to a specific request from our sponsor to include Mr Rothmann, with his specific expertise in JTIMS, in this project.

2 This prototype was developed by IDA as a proof of principle and may be significantly different from the design that OSD ultimately decides upon.

In the bottom field there is a mission essential task list for that unit. Given an ESORTS that displays data is this way, it would be logical for ESORTS to gather unit METLs from JTIMS where they would reside in the JTIMS database. This would be one logical linkage between ESORTS and JTIMS.

One of the significant advantages of linking the two systems is that users will be able to see and report what the entities of the DRRS are ready for, what they are not ready for, and what needs to be done to correct deficiencies as well. For example, in the same field in the screen in Figure 1 there is a column for collective training status (TU). Information on the training status of unit METL could be maintained in JTIMS. A second logical information connection (link) between JTIMS and ESORTS, therefore, would be for ESORTS to draw that TU information from JTIMS.

We developed a prototype screen display on how that might be done. By clicking on either the task number or description, or the TU box for a particular task, JTIMS could export to ESORTS an operations template containing that particular task, and any other task on its METL that is part of that operation. For example, XVIII Corps could have task OP 1.2.3 Assemble Forces in Theater, as part of its Land Offense mission in a particular OPLAN. By clicking on that task, if it were listed in the screen in Figure VI-1, the Land Offense Temple shown in Figure VI-2 could be displayed in the upper right hand portion of the ESORTS screen.

Figure VI-2 represents an operation that XVIII Corps, as the JFLCC for CENTCOM, might conduct as part of a CENTCOM OPLAN. This operations template has twenty-two tasks in it. In this illustrative case, XVIII Corps has chosen thirteen METS (highlighted in black). These METs would be assigned to a unit that would be responsible for conducting it—and doctrinally what may be a task for a higher unit could be a mission for a lower unit. Also a lower unit could very well develop sub tasks as its METL supporting the higher level MET. Some of these tasks would be headquarters tasks, such as conduct mission analysis. But some tasks are also for operational units, such as interdict operational forces/target.

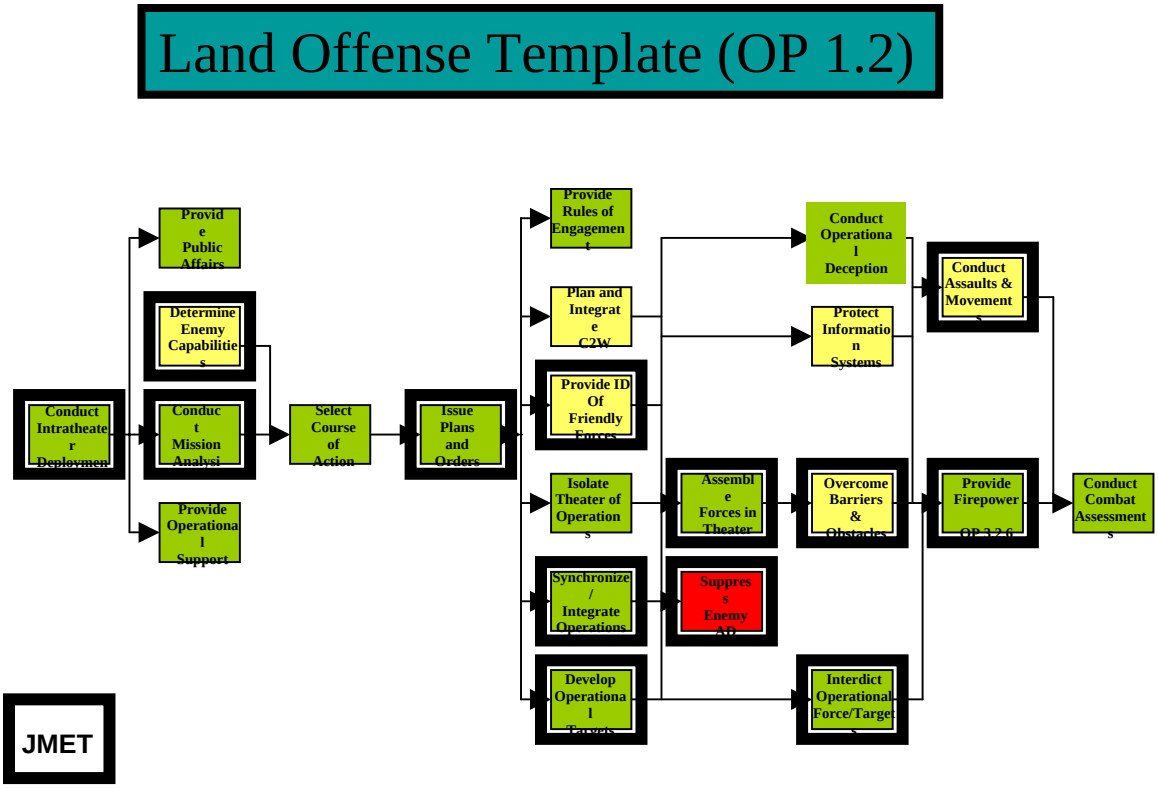

Figure VI-2. Land Offense Template

Once displayed on the ESORTS screen, as shown in Figure VI-3, one could click on that task in ESORTS and information on this task resident in JTIMS could be viewed. For example, in the JTIMS (prototype) operation template task sequencing tool, when you click on a task and then click on properties, the required conditions and standards for that task are displayed, as well such data as observed performance on that task in a recent exercise, along with a report of the unit's training proficiency. This is another example of how these two tools could work to display significant information in a new readiness system.

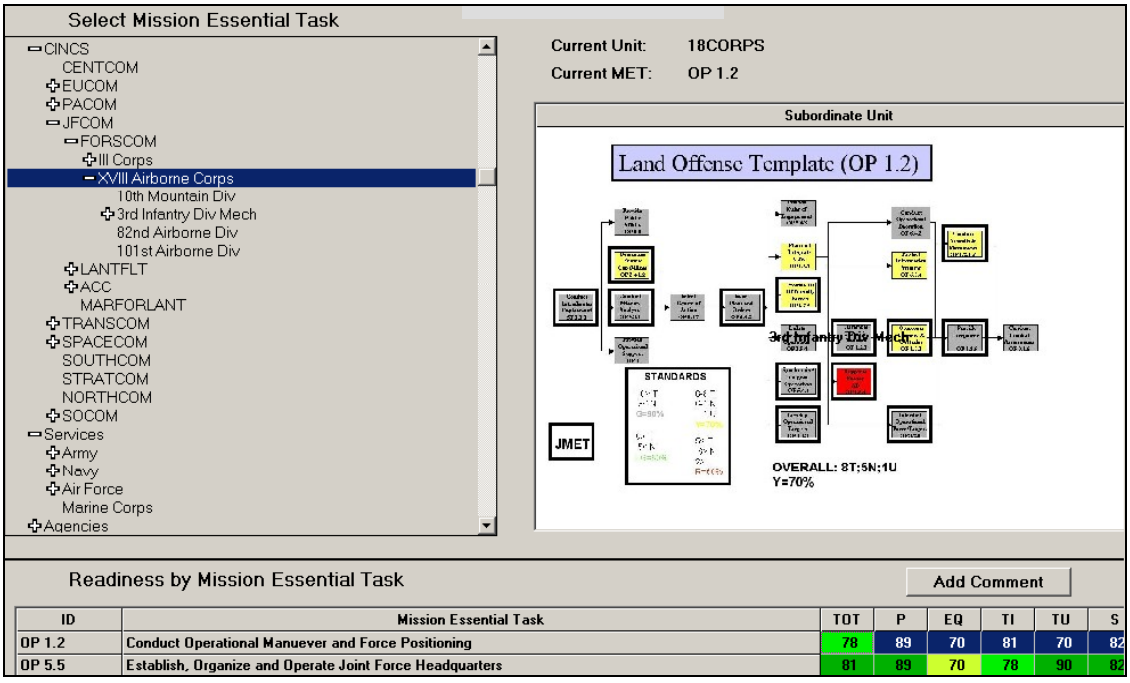

Figure VI-3. JTIMS/ESORTS Land Offense Template

JTIMS also has the capability to show the task assigned to multiple units, and multiple tasks assigned to a single unit. See Figure VI-4 below for an example. It shows multiple units (18 AV BDE, etc) assigned to the task OP 3.2.5.1.

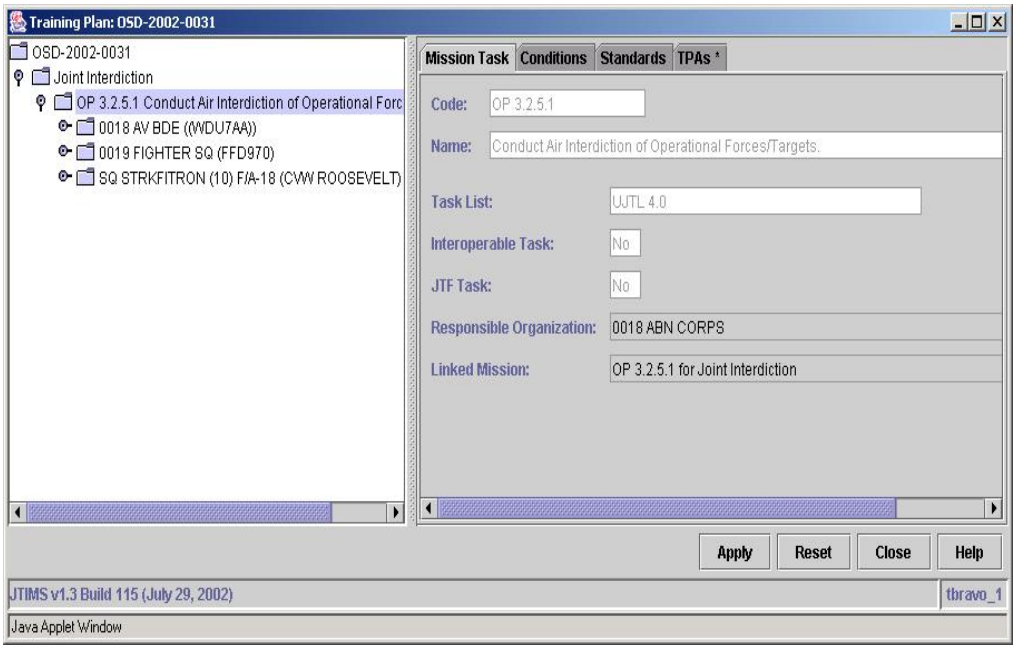

Figure VI-4. Multiple Organizations Performing Same Task

The next figure, also right out of JTIMS, shows multiple tasks (ST 1.1.3, OP 1.2.3, etc) assigned to a single unit, in this case 18 ABN CORPS. Exporting this information from JTIMS to ESORTS would also be very useful.

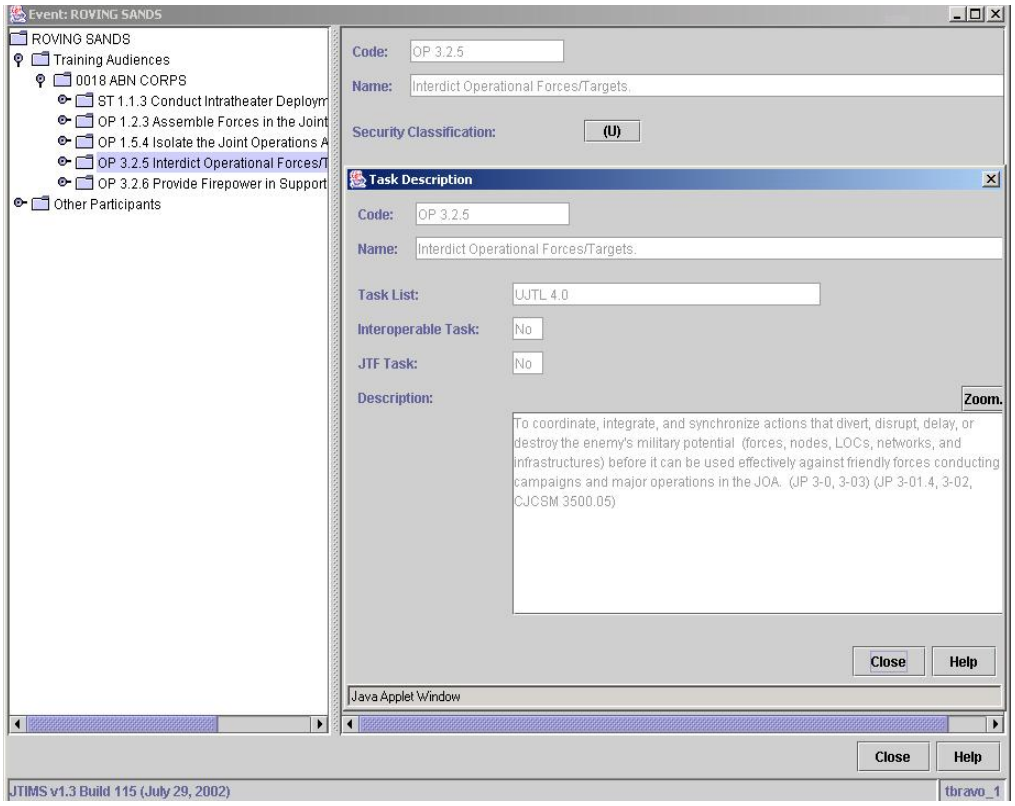

Figure VI-5. Single Organization Performing Multiple Tasks

It is feasible, furthermore, that JTIMS can become the database for all training data by properly linking and integrating the service training management systems to JTIMS. Developing similar architectures between the service systems and JTIMS can do this. It appears that the Army has adopted an architecture for their system that is compatible with JTIMS. The Navy has not yet done so. We do not yet have an Air Force position on this issue. OSD should direct that the service training management systems be made compatible with JTIMS, and JTIMS be the central database for all training data—service and joint. Thus, another powerful aspect of linking ESORTS with JTIMS is the potential ability of accessing joint and service training data together.

Of course not all the information exchanges would be from JTIMS to ESORTS. JTIMS could also display ESORTS information. For example, Figure 6 shows a screen from the JTIMS template prototype, which will eventually be incorporated in JTIMS. It would be entirely appropriate to add a field, perhaps in the form of additional tabs, that would display ESORTS information—perhaps displaying personnel or equipment data that would shed some light on the observations made during a training event, e.g., shortages in key personnel or equipment during a particular event.

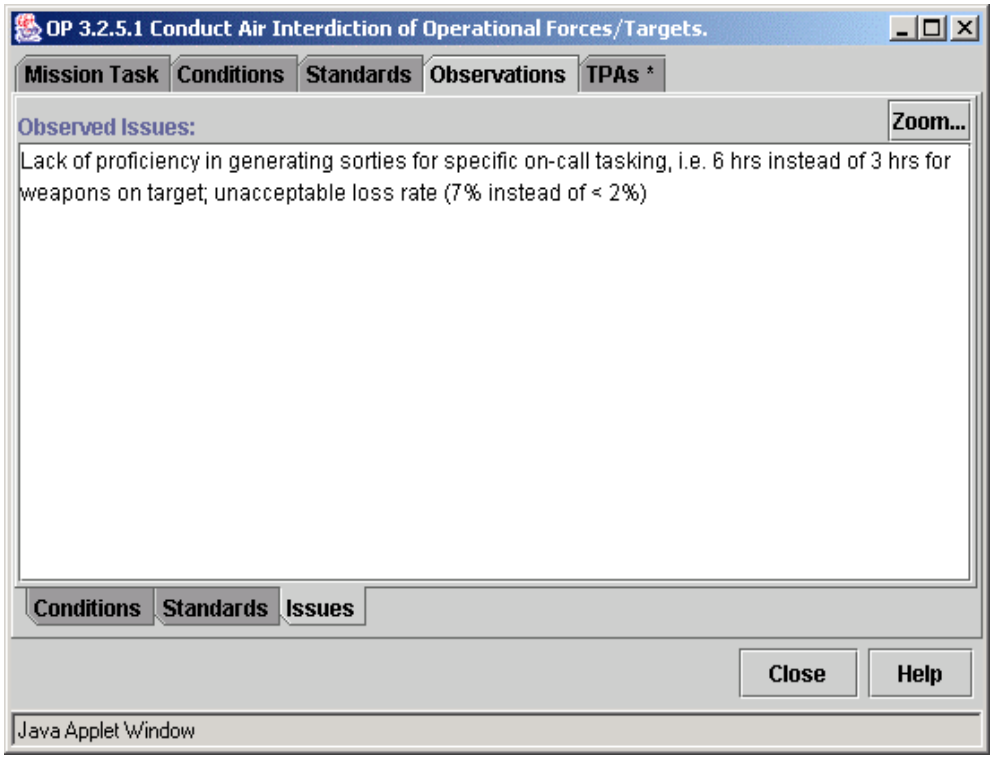

Figure VI-6. JTIMS Observations Screen

In addition, there are many ways to associate this screen with an organization. One way would be to add an additional tab labeled unit(s) and when that tab is brought up the unit or units would be displayed. Another way may be to click on the mission task and that would link to the ESORTS prototype unit view, and show the unit and its associated METL.

To develop and execute the above-described information flows and displays, engineers would have to make the appropriate changes to the source code and database of both systems. This is another logical step in making the linkage between JTIMS and ESORTS.

Finally, once a mature data model for ESORTS is developed, the development should be an integral extension of the JTIMS data model. Figure VI-7, shows a integrated data model for JTIMS with a block showing ESORTS. The ESORTS "model" has data flow lines between JTIMS and that block. With a mature ESORTS data model you could have more specific flow lines and nodes between the two models showing linkages, throughout the JTIMS information flow rather than just flow lines and nodes between the JTIMS model and a block representing the ESORTS data model. For example, the unit data filed would be at the mission analysis and flow through to the

METL block. Additionally, other ESORTS data field would be visible in the Plans and Execution Phase of JTIMS as well. This would be another logical step in linking JTIMS and ESORTS.

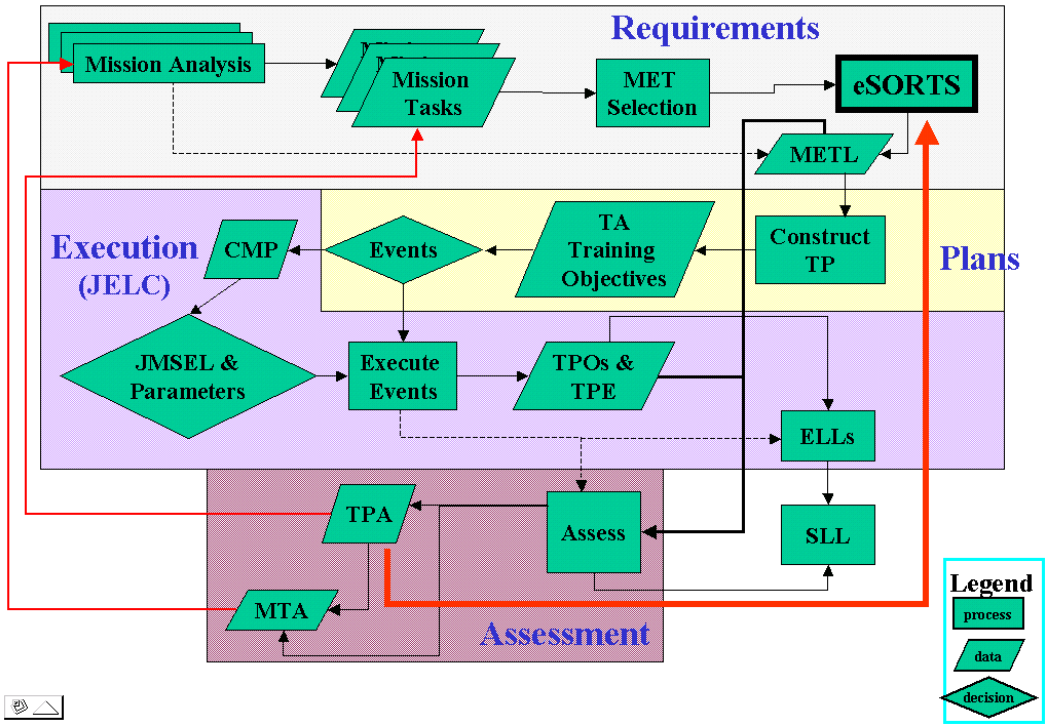

Figure VI-7. Potential JTIMS/ESORTS Integrated Data Model

There are a number of specific steps that can be taken to link JTIMS and ESORTS:

- develop a combined or integrated data model of both systems;
- identify logical information flows and nodes observed in ESORTS and JTIMS;
- examine the information screen sets of the two systems and identify where in those screens information could be shown when required; and
- make the appropriate changes to the source code and database of the two systems to allow the integration and exchange of information.

Table VII-1 provides a table further outlining a sample of potential links between JTIMS and ESORTS, and listing the potential benefits to both systems.

Table VI-1. Sample Links Between JTIMS and ESORTS

Link	From	To	Remarks	Benefits
UJTL/ Service Task Lists	JTIMS	ESORTS	Allows ESORTS users to view tasks/conditions/ standards in lists	Both systems can compare and contrast T/C/S between the UJTL and service task lists
JMETL/METL	JTIMS	ESORTS	Allows ESORTS to list JMETL/METL by organization or by OPLAN	Both systems can view the JMETL/METL of an organization and in an OPLAN
Operations Templates	JTIMS	ESORTS	Allows ESORTS users to view operations templates with JMETL and sub METL	Both systems can see a temporal view of mission tasks associated with an operation or mission
JMETL/METL standards	JTIMS	ESORTS	Allows ESORTS users to view required standards	Both systems can access the required standard for an associated JMETL/METL
JMETL/METL conditions	JTIMS	ESORTS	Allows ESORTS users to view conditions set	Both systems can access the desired conditions for an associated JMETL/METL
JMETL/METL assessments	JTIMS	ESORTS	Allows ESORTS users to view assessments in terms of T/P/U and evaluate TU status	Both systems can access current assessments of JMETL/METL and, applying business rules can derive a TU %
JMETL/METL issues	JTIMS	ESORTS	Allows ESORTS users to view reasons why JMETL/METL a T/P/U	Both systems can view reasons that a JMETL/METL do not meet standards
JTIMS Training Audiences	JTIMS	ESORTS	Allows ESORTS users to view what Training Audiences are assigned tasks	Both systems can compare Training Audiences and tasks between events

Table VI-1. Sample Links Between JTIMS and ESORTS (Cont.)

Link	From	To	Remarks	Benefits
JTIMS Training Events	JTIMS	ESORTS	Allows ESORTS users to view data from training events	Both systems can access training event schedules
JTIMS Lessons Learned	JTIMS	ESORTS	Allows ESORTS users to view lessons learned from training events	Both systems can access lessons learned
ESORTS Personnel status	ESORTS	JTIMS	Allows JTIMS users to view personnel fill/key MOS shortages/turnover rates for training audience	Both systems can compare personnel status and its affect upon training
ESORTS Equipment status	ESORTS	JTIMS	Allows JTIMS users to view equipment on hand/ operational rates/ key shortages for training audience	Both systems can compare equipment status and its affect upon training
ESORTS Individual training	ESORTS	JTIMS	Allows JTIMS users to view individual training status of training audience	Both systems can compare individual training and its impact on unit training
ESORTS crew training	ESORTS	JTIMS	Allows JTIMS users to view crew training status of training audience	Both systems can compare crew training and its impact on unit training

Chapter VII

READINESS REPORTING FOR LARGE ORGANIZATIONS

Solving the Aggregation Problem

The Department of Defense Readiness Reporting System (DRRS) is intended to "measure and report on the readiness of military forces and the supporting infrastructure to meet missions and goals assigned by the Secretary of Defense."[1] The directive further elaborates:

> "The DRRS shall provide the means to manage and report the readiness of the Department of Defense and its subordinate Components to execute the National Military Strategy as assigned by the Secretary of Defense in the Defense Planning Guidance, Contingency Planning Guidance, Theater Security Cooperation Guidance and the Unified Command Plan."[2]

In order to accomplish this goal, the directive "establishes a capabilities based, adaptive, near-real-time readiness reporting system for" DoD.[3] The DRRS participants (all of DoD) will be required to report readiness in terms of mission essential tasks (METs) and to tie reporting to standards for resources and training. The DRRS Enhanced Status of Resources and Training System (ESORTS) will gather the data and will include methods to "highlight deficiencies in the areas of training, personnel, equipment, ordnance, and sustainment."[4] ESORTS is to be built from the existing Global Status of Resources and Training (GSORTS) system, which today provides a measure of readiness of a sub-set of the basic building blocks of operational mission accomplishment e.g., ships, battalions and air squadrons.

There are four fundamental requirements imbedded within the DRRS Directive. Each is essentially new and each is critical to accomplishing the full intent of the concept as outlined above. The first is reporting readiness by MET. This will focus reporting on answering the question "ready for what?" The second requirement is reporting readiness for all DoD basic building block entities, not just for selected operational units now

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1 DoD Directive 7730.65, Department of Defense Readiness Reporting System, 3 June 2002.

2 Ibid., para 4.1.

3 Ibid., para 1.1.

4 Ibid., para 4.5.1

reported in GSORTS. This will significantly broaden reporting to include the many critical but currently not accounted for headquarters, organizations, installations and facilities. Third is the requirement to systematically aggregate readiness above the basic unit level to allow meaningful and rigorous status reports for higher-level, larger organizations (e.g., a division, a MEF, a joint task force, or a unified command) on a task-by-task basis. This will make the readiness of large and complex, i.e., composite, military systems visible for the first time. And fourth is the requirement for software and links to existing and to-be-created transactional databases providing the basic entity status data that then can be compared to standards. This will underpin the first three requirements and will be a principal tool providing the means for managing readiness based on real-time and comprehensive reporting.

This paper addresses primarily the third requirement—the need for a consistent methodology across DoD for aggregating task readiness above the basic entity level. But in conjunction with its conclusions, the paper also touches on the fourth requirement—aggregating software. The paper first outlines the research methodology including a description of the characteristics necessary in a composite reporting system for large organizations. Then it summarizes what each service does now, if anything, in formal GSORTS reporting according to regulations to aggregate the data of basic reporting units into a readiness indicator for a larger unit. In conjunction with the service summaries, the paper examines whether the Army's existing readiness reporting methodology for divisions, as is or with some modification, could be adapted to meet the new DoD requirement. It also describes a parallel theoretical composite reporting construct or prototype that does contain all desired characteristics.

RESEARCH METHODOLOGY

The research initially was an independent effort to determine the minimum desired characteristics of a DoD-wide reporting system for large organizations that we call composite reporting and from that to develop a generic conceptual prototype containing those characteristics. It was based on general familiarity with existing GSORTS procedures and the impression that no service had an adequate reporting methodology that could serve as a model for DoD. But to be sure and to draw on any existing good ideas, the effort included a review and analysis of what service readiness reporting regulations prescribe for composite reporting the readiness of large organizations. That included looking at possible improvements that might make a modified service system suitable as a prototype. The process of examining service

formal GSORTS reporting revealed other service readiness related reporting activities and methodologies. These were also examined for their relative merits. This background provided a good basis for the prototype described later in the paper.

Underlying the methodology is the assumption that since ESORTS is to be built from the existing GSORTS, the aggregation methods for composite reporting would be based on the assumptions underlying GSORTS. This appears both logical and reasonable. It means that the data reported for readiness status at the basic entity level will be aggregated for higher-level organizations using prescribed procedures or rules. It also means that there will not be an entirely separate system for aggregation based on other assumptions and/or other data.

Although the metrics vary from unit to unit and service-to-service, there is a consistent underlying hypothesis throughout GSORTS that input status is a good predictor of output (task performance or capability) at the entity level. This is the fundamental GSORTS/ESORTS assumption that is imbedded in all current GSORTS procedures that prescribe a consistent methodology for reporting "readiness" at the basic entity level (battalion, ship, squadron) based on status of four inputs—personnel, equipment, supplies and training. All services report their entity level readiness today on this basis.

Therefore the methodologies examined in this paper make the same key assumption: that input status, properly aggregated by "rules," can be a reliable basis for predicting readiness in terms of output performance (the work a unit does) of larger military units and supporting organizations on a task-by task-basis. In contrast to when GSORTS was designed, this aggregation and application of potentially complicated "business rules" is now possible because of automation.

COMPOSITE READINESS REPORTING SYSTEM CHARACTERISTICS

The first characteristic of composite reporting is that it should be based on measurable input status. The second is that it should build on the basic ESORTS reporting requirements at the entity level. If all important system entities are reporting task readiness on the basis of the status of four basic inputs entered into databases, ESORTS should be able to aggregate the required information to determine the readiness of higher-level organizations without additional or separate reporting requirements.[5]

[5] However this will require identification of additional entities that do not currently report readiness. Examples include higher unit headquarters staffs, and critical physical components of the C2 structure.

Next, what is not defined or required in GSORTS but is likely to be needed in ESORTS is a valid methodology for aggregating the status of individual entities organized into groups to perform specific tasks. Thus the third desired characteristic is that the ESORTS aggregation methodology should be designed to produce a good predictor of output for a specific task for the group of entities that together constitute a higher-level organization (division, battle group, wing, joint task force). In order for a method to be valid, users must believe it actually predicts what it is intended to predict.

Fourth, the method for aggregation should be logical in construction, intuitively simple to understand and transparent to its users. Fifth, there should be only one aggregation methodology used throughout DoD to ensure common standards and understanding as well as interoperability. Therefore the method should be flexible enough to be applicable across all services, combatant commands, and defense agencies. It should be equally usable by and useful to them as well as to senior officials in DoD.

SERVICE APPROACHES TO REPORTING COMPOSITE READINESS

Although not required by GSORTS, each service has experimented with aggregation. Only the Army has incorporated aggregation methodology into its GSORTS regulations. An overview of each service follows.

Air Force

The Air Force has no procedure imbedded within its GSORTS process to provide for composite readiness reporting for organizations above the unit level. Thus it provides no ready GSORTS aggregation model useful to this effort. In addition to GSORTS, the Air Force uses two other separate but linked readiness related systems that produce readiness indicators for selected units. The Air Force reporting system includes the AEF UTC Reporting Tool (ART) assessment that is a simple Green, Amber, Red static readiness status indicator of task specific unit modules called unit type codes (UTC).[6] In addition, for units alerted-to-deploy, the Air Force generates a commander's certification of readiness. These two systems are used by larger organizations for assessing the readiness of a collection of subordinate units.

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6 Unit Type Code (UTC) is a unique Air Force concept which tracks components of larger units according to the specific tasks they perform. For example an Airlift Control Squadron might have six separate UTCs.

Each Air and Space Expeditionary Force (AEF) is composed of a large number of individual UTCs.[7] On a monthly basis (or when specific changes occur) the commander owning a UTC allocated to an AEF (or an Air Expeditionary Wing (AEW), Lead Mobility Wing or designated Enabler) reports a readiness assessment using the Air Force's AEF UTC Reporting Tool (ART).[8] These assessments provide the chain of command information necessary to make force and resource allocation decisions to effectively support theater commanders.

As an AEF approaches its deployment eligibility window, commanders owning UTCs that are tasked to deploy or placed on a Prepare To Deploy Order provide an additional assessment of the affected UTCs. This assessment "certifies" the UTC is ready to meet theater requirements for an AEF eligibility period. Although supported by the ART assessments, this certification entails an independent assessment. The certifications of each UTC are compiled by each level of the chain of command, from squadron to wing, numbered air force, and major command, to the Commander, Air Combat Command (ACC). Through this process, the ACC Commander receives an aggregated view of the readiness of the UTCs to deploy and employ. This in turn allows the ACC Commander to certify the readiness of the AEF in question to provide the capabilities required of the combatant commanders.

Thus while it does not create composite readiness reports for its wings, numbered air forces and major commands, the Air Force appears to aggregate readiness of pieces of these organizations through its Air and Space Expeditionary Force (AEF) Certification process. However, this process actually results in only an aggregated statement of the readiness status of all the components of an AEF; it is not a composite readiness report. The aggregation made by each level of the chain of command is simply a collection of lower-level reports—nothing is added. The Air Force apparently sees no need to make a

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7 "Available Air Force unit type codes (UTCs) have been equitably aligned across ten AEFs and two AEW libraries so each possess roughly equal capabilities. These libraries provide a composite of capabilities from which force packages are developed and tailored to meet mission requirements." In other words, these libraries "contain a finite amount of capability that at any given time identifies forces that constitute the total force that has been made available/assigned for scheduling." From Air Force Instruction (AFI) 10-244, *Reporting Status of Aerospace Expeditionary Forces*, 19 February 2002, p. 4-5.

8 Because of its specific focus on the modular scalable capability-based UTC concept the Air Force uses to manage its deployable assets, the ART complements readiness data reported in Status of Resources and Training Systems (SORTS). Therefore, a unit's C level as reported in SORTS may not directly correlate to it's ability to support a specific UTC tasking as indicated in ART. From Air Force Instruction (AFI) 10-244, p. 6.

true composite report above the UTC level, as the Air Force assumes that the "readiness of the pieces (UTCs) equates to readiness of the whole."[9]

Thus neither of these separate Air Force systems has an explicit methodology for aggregation other than the simple assumption cited above. It is not surprising therefore that the ART and certification systems can actually produce different status indicators for the same unit. In essence the AEF certification occurs after the required UTCs are brought up to a satisfactory readiness status. Additionally assessing their readiness to deploy, as an aggregated unit, is purely subjective. Therefore, since the Air Force simply does not aggregate, it offers no model for DoD-wide use.

Army

The Army has prescribed GSORTS procedures for aggregating readiness reports into what it calls composite reports.[10] The Army composite readiness reporting system currently provides a methodology only for determining an overall C-level (or readiness for all design tasks combined), but the same methodology easily could be used on a task-by-task basis. The composite methodology simply extends the procedures for determining basic unit readiness as follows: "Composite reports are based on the calculation of the average status level within the major combat unit for each of the three resource areas (PER, EOH, and ES)."[11] These are then combined with "a composite training level (T-level) mission accomplishment estimate (MAE) following" the same procedures used for subordinate units. The composite T-level rating is not based just on the ratings of subordinate units. It also is supposed to take into account staff training and collective training at the higher unit level.[12] But it is based on the commander's judgment with no direct metrics. An example of this method is found in paragraph 10-5, AR 220-1.[13]

The current AR 220-1 composite reports calculation method contains two weaknesses. The first is that averaging a unit's personnel, equipment and supplies status gives all equal weight, yet they are not necessarily of equal importance, particularly on a task-by-task basis. The second weakness is that the training rating has no standardized

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9 See AFI 10-201, 8 Jan. 2002, para. 2-7; and AFI 10-244 19 Feb. 2002, para. 3-5 & para. 4-2.

10 See AR 220-1, 15 Nov 2001, Chapter 10.

11 AR 220-1, para. 10-1 c.

12 AR 220-1, para 10-1 d.

13 See www.army.mil/usapa/epubs/220_Series_Collection_1.html.

metrics and is totally subjective. While the commander presumably would take into account the training status of all subordinate units and add to that the additional staff and higher unit collective training needed there is no easy visibility into how the rating used was derived.

In an attempt to overcome the two weaknesses in Army composite reporting while preserving the many useful aspects of the AR 220-1 method, we examined two possible modifications. The following examples use a heavy division[14] and assume readiness is being determined for a specific task "Conduct an Attack".[15]

The first example, Method A, shown below, simply adds the training status of each subordinate unit to the AR 220-1 method, determines an average for training in addition to those for resources, and then applies the AR 220-1 rules. This method would also get at the issue of staff and collective training by including command posts and subordinate headquarters as measured units.[16] In effect this is a form of weighting. Although not shown in the example, the method also could weight by counting important units (e.g. tank battalions for an attack) twice. Example Method A most closely follows AR 220–1 in that PER, EOH, ES, and TR status for all units first is turned into an average for the composite unit. The method then uses the average status of each to determine overall higher unit task readiness following AR 220–1 rules.

14 Example TOE at www.globalsecurity.org/military/library/policy/army/toe/87000A200.htm.

15 See Table VII-5 for a list of subordinate unit tasks as specified in FM 7-15.

16 Presumably their training readiness metrics would include the appropriate amount of staff and collective training.

Table VII-1. Composite Readiness Report Method A Heavy Division
Task: Conduct an Attack

Unit	PER[17]	EOH	ES	TR
Division Command Posts	**1**	**2**	**2**	**2**
Maneuver Brigade Headquarters (lowest)	**1**	**1**	**2**	**2**
Aviation Brigade Headquarters	**1**	**2**	**2**	**2**
Engineer Brigade Headquarters	**1**	**3**	**2**	**2**
Division Artillery Headquarters	**1**	**2**	**2**	**2**
Division Support Command	**2**	**1**	**3**	**3**
Mechanized Infantry Battalion 1	**2**	**2**	**2**	**2**
Mechanized Infantry Battalion 2	**1**	**1**	**1**	**1**
Mechanized Infantry Battalion 3	**1**	**1**	**2**	**2**
Mechanized Infantry Battalion 4	**3**	**2**	**3**	**2**
Mechanized Infantry Battalion 5	**1**	**1**	**1**	**1**
Tank Battalion 1	**2**	**2**	**2**	**2**
Tank Battalion 2	**1**	**1**	**1**	**2**
Tank Battalion 3	**1**	**1**	**1**	**1**
Tank Battalion 4	**1**	**2**	**3**	**2**
Aviation Attack Battalion (AH –64) 1	**1**	**1**	**1**	**1**
Aviation Attack Battalion (AH –64) 2	**1**	**2**	**1**	**1**
Cavalry Squadron	**1**	**2**	**2**	**2**
Aviation Support Battalion (UH- 60)	**3**	**2**	**3**	**3**
Artillery Battalion (155mm) 1	**2**	**1**	**1**	**1**
Artillery Battalion (155mm) 2	**2**	**2**	**3**	**2**
Artillery Battalion (155mm) 3	**3**	**2**	**2**	**2**
MLRS Battalion	**2**	**3**	**2**	**2**
Engineer Battalion 1	**3**	**3**	**3**	**2**
Engineer Battalion 2	**2**	**3**	**2**	**2**
Engineer Battalion 3	**3**	**3**	**3**	**2**
Signal Battalion	**1**	**1**	**1**	**1**
Military Intelligence Battalion	**2**	**2**	**2**	**2**
Air Defense Battalion	**3**	**3**	**4**	**3**
Chemical Company	**2**	**2**	**2**	**2**
Totals 30 Units	51	56	61	56
Totals / # units	1.70	1.87	2.03	1.87

AR 220 – 1, Table 10- 1 Composite level criteria

Level	At least 50% of units at	Average of units
1	**1**	**1.54 or less**
2	**2 or better**	**1.55 to 2.44**
3	**3 or better**	**2.45 to 3.34**
4	**4 or better**	**3.35 or more**

Composite Ratings per table 10-1 are: PER 2; EOH 2; ES 2; TR 2
On each measure more than 50% of units are 2 or better. Therefore overall composite task rating is 2 (or 80 – 89% effective). But the overall rating for the Div could be up or downgraded by the commander.

[17] Resource and training status as reported per supporting task.

The second example, Method B, is simpler than the first. It uses only the average of the division's subordinate units overall supporting task readiness as the base indicator to determine the division's readiness. In the example below, as in method A, command posts and headquarters are included for the reasons cited above and additional weighting, though not used, could be. This method makes subordinate unit overall task readiness more visible and bases the division readiness on subordinate unit overall task readiness rather than on composites of resources and training. However it is obvious that along with appropriate rules for putting them together, both methods could be used in combination to provide both horizontal and vertical views of subordinate and composite unit task readiness.

Table VII-2. Composite Readiness Report Method B Heavy Division
Task: Conduct an Attack

Unit	Supporting Task Readiness
Division Command Posts	**2**
Maneuver Brigade Headquarters (lowest)	**2**
Aviation Brigade Headquarters	**2**
Engineer Brigade Headquarters	**3**
Division Artillery Headquarters	**2**
Division Support Command	**3**
Mechanized Infantry Battalion 1	**2**
Mechanized Infantry Battalion 2	**1**
Mechanized Infantry Battalion 3	**2**
Mechanized Infantry Battalion 4	**3**
Mechanized Infantry Battalion 5	**1**
Tank Battalion 1	**2**
Tank Battalion 2	**2**
Tank Battalion 3	**1**
Tank Battalion 4	**3**
Aviation Attack Battalion (AH –64) 1	**1**
Aviation Attack Battalion (AH –64) 2	**2**
Cavalry Squadron	**2**
Aviation Support Battalion (UH- 60)	**3**
Artillery Battalion (155mm) 1	**2**
Artillery Battalion (155mm) 2	**3**
Artillery Battalion (155mm) 3	**3**
MLRS Battalion	**3**
Engineer Battalion 1	**3**
Engineer Battalion 2	**3**
Engineer Battalion 3	**3**
Signal Battalion	**1**
Military Intelligence Battalion	**2**
Air Defense Battalion	**4**
Chemical Company	**2**
Totals: 30 units	**68**
Total / #units	**2.27**

AR 220 – 1 Table 10- 1 Composite level criteria (Modified)

Level	At least 50% of units at	Average of units
1	**1**	**1.54 or less**
2	**2 or better**	**1.55 to 2.44**
3	**3 or better**	**2.45 to 3.34**
4	**4 or better**	**3.35 or more**

17 of 30 units (> 50%) at 2 or better & average @ 2.27
Therefore Div rating for this task is 2 (or 80 to 89% effective). But overall rating for the Div could be up or downgraded by the commander.

But, individually or together, notional methods A and B are still based on averages. Using either method it is conceivable that averages could conceal real problems in specific task readiness. For example using method B, if the first six entries in the example are upgraded to level 1, the four tank battalions could be level 4 and the average would not change. But readiness for a heavy division attack could hardly still be considered at level 2 with unready tank units. Presumably the commander's override would flag this kind of problem, but it would be nice if the measurement system metrics were sufficiently discriminating to prevent such an anomaly from happening.

Accordingly the current Army methodology, even if modified as in the examples, doesn't appear to be a good predictor of output, and therefore its validity is questionable. It probably is not a good model for use across DoD.

Marine Corps

The Marine Corps GSORTS procedures indicate that larger organizations such as Marine Expeditionary Forces, Expeditionary Brigades, and Expeditionary Units are to be reported in GSORTS.[18] Like the Army, reporting is against the mission for which they were designed. However unlike the Army, Marine Corps instructions provide no structured methodology for aggregating the readiness of the subordinate entities that comprise the larger unit. Instead the higher-level commander is required "to subjectively evaluate his subordinate units' objective data and make an assessment regarding his command's ability to execute its primary wartime mission."[19]

18 Marine Corps Order P3000.13D, 17 April 2002, p. 1-4.

19 Ibid., p 1-10.

A subjective evaluation does not satisfy at least four of the necessary characteristics outlined above for composite reporting. It is not based on inputs, does require a separate reporting method, won't pass a validity test and is not transparent. Accordingly the current Marine Corps methodology like that of the Army would not be a good model for use across DoD.

Navy

The Navy GSORTS instruction does not provide for aggregating readiness above the ship, aircraft squadron level.[20] Moreover the Navy has no other separate system for measuring and reporting readiness of units or aggregates of units. Accordingly there is no formal model sanctioned by and in use throughout the Navy that could be adopted as is, or with modification, for use throughout DoD.

IDA NOTIONAL TASK COMPOSITE READINESS REPORTING PROTOTYPE

Having confirmed that no service currently has a suitable methodology for aggregating the readiness of entities in a way that provides a valid representation of the readiness of larger organizations, we proceeded to build a notional prototype that contains all the characteristics outlined earlier. This example also uses an Army heavy division.

Notional task composite readiness method C shown below shows a different approach to aggregation for composite readiness reporting. It is more discriminating than the current Army composite system or either of the possible modifications outlined above (methods A & B). It is based on the method the Navy currently uses to determine equipment readiness for ship reports in GSORTS and is consistent with the basic concept of ESORTS, i.e., that ESORTS belongs to the chain of command.[21] This method would require the Army to first determine the minimum supporting task readiness allowable for each contributing unit at each level of task readiness for the higher unit. These units are then arrayed in a decision tree/flow chart format as shown.

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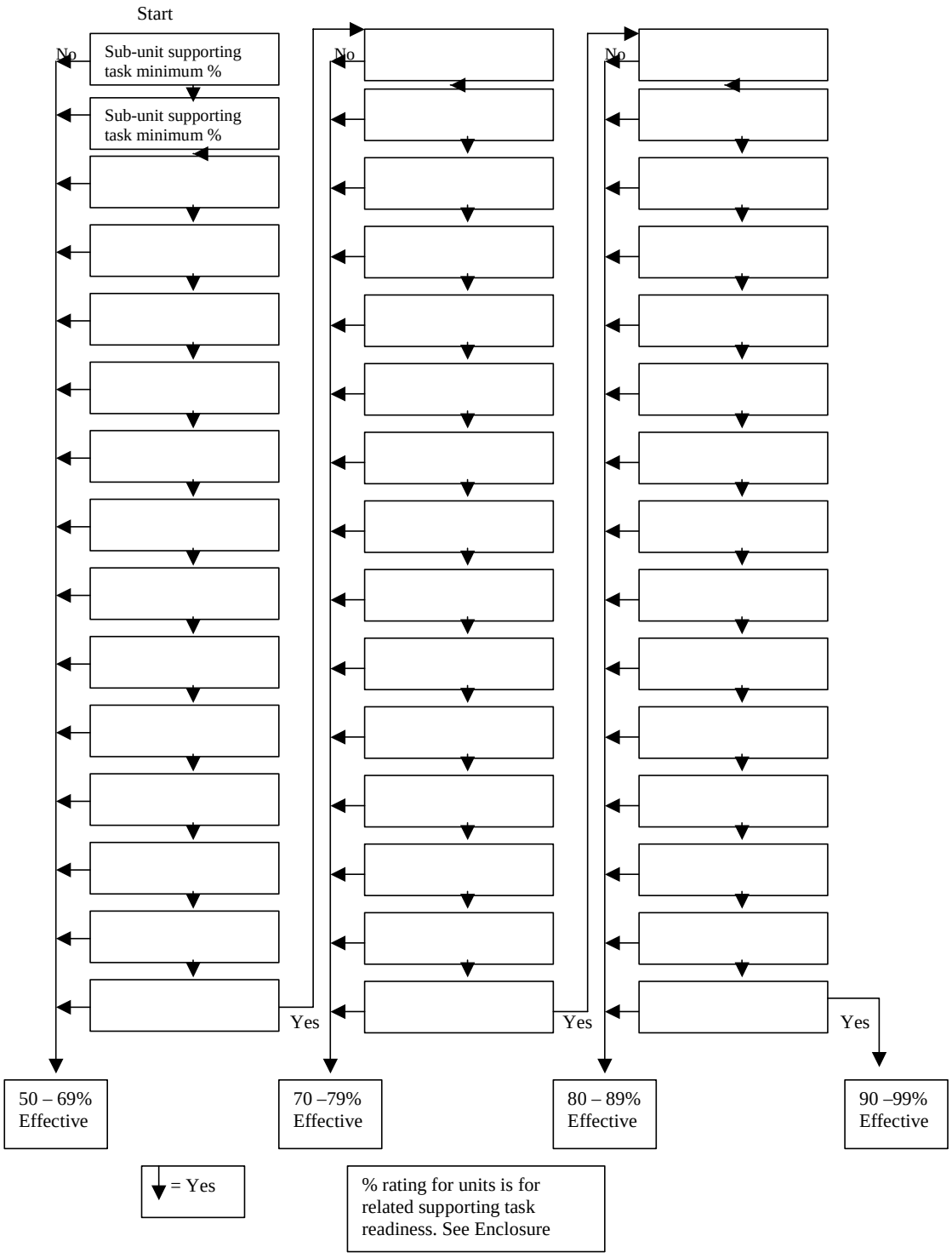
20 *Status of Resources and Training System Joint Report- Navy*, NTTP 1-03.3 (Rev-A), March 2001.

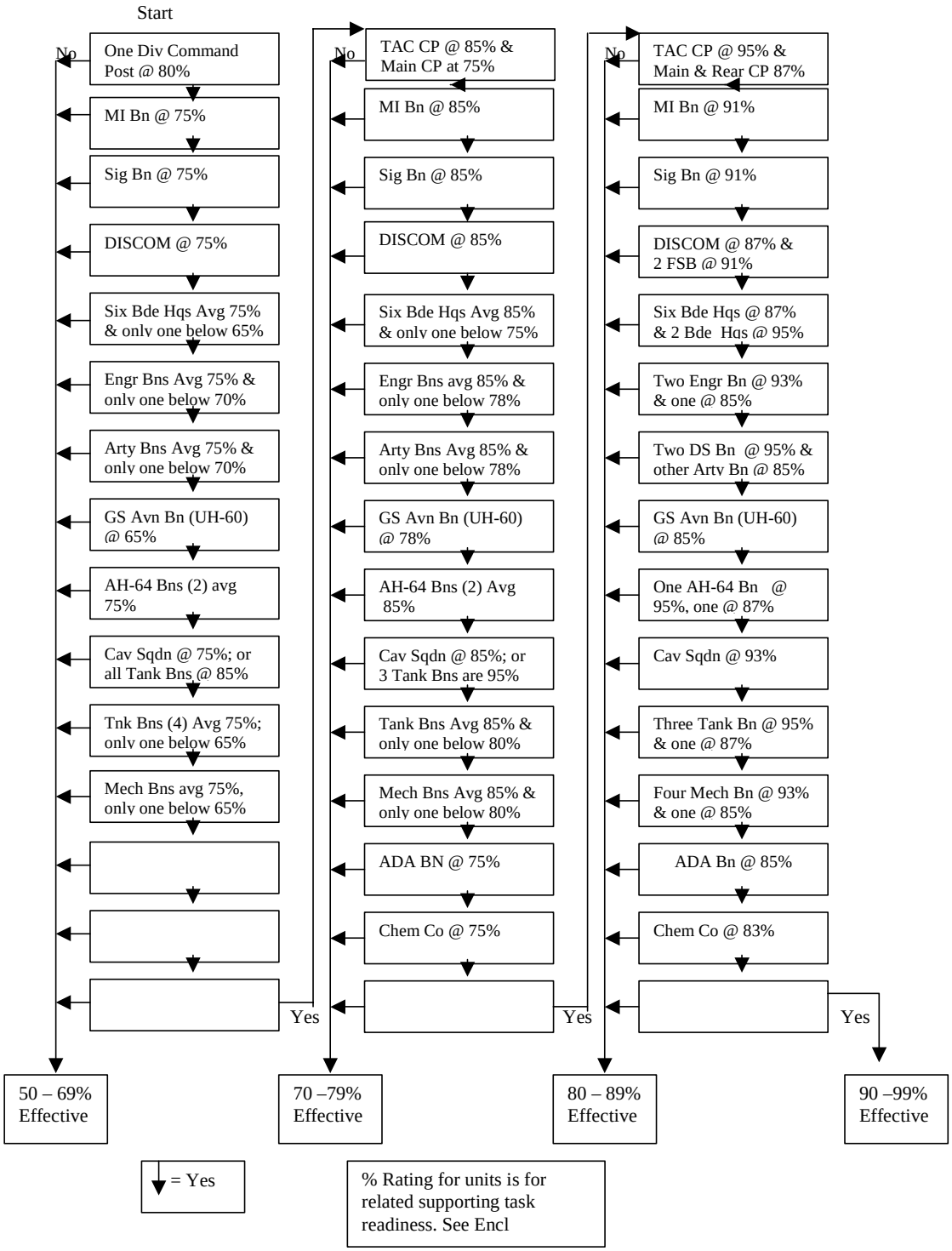
21 See COMNAVSURFPACINST 3501.2G/COMNAVSURFLANT 3500.7D, 29 May 1992, *SORTS Readiness Reporting, Supplement 1*, p3, Equipment /CASREP Readiness Rating Diagrams.

Table VII-3. Composite Readiness Report Method C
Template Unit Type:_____
Task: _____



For each level of task readiness of the notional division, all of its headquarters, battalions, and, in some cases, companies must be at or above a given supporting task readiness level individually. That level is a function of the importance (or weight) the Army applies to that unit's contribution relative to that particular task. In some cases unit capabilities can substitute for others. This method would take that into account (most substitutions would be by like units but dissimilar substitutions also are conceivable, for example attack helicopters for tanks). This method assumes that subordinate unit supporting/contributing tasks to the division level task are clearly and completely identified and aligned. Thus in this approach (unlike methods A & B) each critical functional capability necessary for task accomplishment is taken into account as a limiting factor. Unless supporting tasks can be performed, the larger unit task cannot be performed. A notional example follows. This example can be easily integrated into ESORTS and modified as necessary by the responsible level of the DoD component's chain of command.

Table VII-4. Composite Readiness Report Method C
Heavy Division
Mech Task: ART 8.1.2: Conduct an Attack



While perhaps challenging to design the decision tree/flow charts that describe the readiness input standards for aggregating readiness at four basic levels, once they exist and units/entities readiness reports are automatically calculated in ESORTS by task, the entire roll up process would be automated. Components of the larger organization that perform essential tasks, including entities such as command posts in the example, would be identified and then have their resources and training status automatically updated from databases. Additionally the specific training of all elements of the larger organization could be more closely tailored to the requirements of mission essential tasks. Task-by-task readiness would then be visible at all command levels as would the units or other entities that are limiting factors preventing achievement of higher readiness. In addition, once these readiness input standards are completed, commanders will be able to adjust them to reflect slightly different tasks or different requirements for the same task.

We believe this prototype contains all the characteristics postulated for a good composite reporting system and is better than any other system in use by a service. But more importantly, developing this notional composite readiness reporting prototype and the logic behind it proved extremely useful in understanding the Atlantic Fleet management tool mentioned earlier and recognizing its potential with respect to composite readiness reporting. We believe this tool uses essentially the same methodology outlined in the IDA prototype but is much more than an idea.[22] It is an operational system that is in use today.

MISSION CAPABILITY ASSESSMENT SYSTEM

The Navy's Atlantic Fleet headquarters is developing a readiness tool called the Mission Capability Assessment System (MCAS).[23] MCAS has been under development and implementation since 1996 but is still technically a prototype methodology. It is designed to provide the battle group commander with a tool for assessing capability based, group level readiness on a daily basis. In addition, fleet trainers use it in managing the deployment preparation of battle groups (BG) and amphibious ready groups (ARG).

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22 The Atlantic Fleet method follows the same logic as outlined above for Method C in that minimum capability (readiness) levels of all supporting task units are established for each level of capability of the BG. MCAS calls these required levels "breakpoints". Readiness of any essential sub-unit or equipment below its breakpoint will limit the overall BG output capability—it becomes a constraint. Though the format is different from that shown for Method C, the MCAS for BG Power Projection uses the same Method C logic and process for aggregation.

23 Our understanding of the MCAS potential stems from study and briefings initially related to metrics for training readiness. For details contact Richard Pearsall, Northrop Grumman IT, Fleet Support Manager for MCAS, richard.pearsall@navy.mil.

This prototype is now used in managing the work-up for BG and ARG deployments in the Atlantic Fleet and then if desired by the BG or ARG commander (as most do) during deployment to monitor mission capability (or readiness).

Although technically a prototype, MCAS is a fully developed system with two principle objectives: measure BG/ARG performance (read readiness); and provide the BG/ARG commander with a daily assessment tool which fills a SORTS void (lack of aggregating tools) and depicts BG/ARG level capability based readiness for essential missions. The current system covers seven of 13 BG missions: Air Dominance, Maritime Superiority, Power Projection, Sustainment, Peacetime, Surveillance/Intelligence, and C2. These are essentially the battlegroup's mission essential tasks.

MCAS produces what are essentially composite readiness reports on a task-by-task basis drawn from reports that already are routinely rendered (with the potential to come directly from data bases) with up-to-date status on selected PER, EOH, ES, & TR measures.[24] It includes common, standardized metrics but with a flexible weighting methodology offering options for adjusting the data rollup algorithms.

MCAS includes many desirable features and advantages, which take it well beyond static composite readiness reporting. It is "a capabilities based, adaptive, near-real-time readiness reporting system" as called for by the DRRS directive.[25] The methodology reports in term of mission essential tasks (MET) and ties reporting to standards for resources and training. In other words, MCAS appears to do now what ESORTS is intended to do in the future including highlighting deficiencies in the areas of training, personnel, equipment, ordnance, and sustainment.

The methodology has not been used in monitoring aggregate readiness of larger naval units and other types of units including those in other services. Our review to date indicates that MCAS appears to be sufficiently flexible that it could be expanded for such use. Given its flexibility there is no obvious reason it could not be used for joint organizations, as the MCAS methodology and software for an ARG/MEU(SOC) demonstrates. Similarly MCAS could be applied to service or agency functions including critical support organizations and their installations and depots, as well as critical civilian infrastructure.

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24 The number of measured items included in the rollup for a particular task can be large (over 1000) but since they are drawn from existing reports (and potentially data bases) the process is nearly painless.

25 DoD Directive 7730.65, Department of Defense Readiness Reporting System, 3 June 2002, para 1.1.

CONCLUSIONS

One of four fundamental requirements imbedded within the DRRS Directive is the ability to create composite readiness reports for large organizations of all types. We initiated this effort with the modest goal of developing a notional prototype to demonstrate that it could be done. That goal was achieved and in the process we discovered the more advanced version of our concept called the Mission Capability Assessment System. Together they demonstrate that a task-based composite readiness reporting system containing our postulated five essential characteristics and solving the aggregation problem is doable.

The essential characteristics that the task-based composite readiness reporting system can and should include are that it:

- Is based on measurable input status and the inputs-can-predict-output assumption of GSORTS
- Requires no additional or separate reporting requirements since all relevant information is already reported at the entity level
- Has valid aggregation methodology; meaning that users, with a high degree of confidence, believe it actually predicts what it is intended to predict.
- Is simple to understand and transparent to its users
- Is flexible enough to be used across DoD

Task-based composite readiness reporting appears to be doable. It should be relatively easy once the concept and methodology are established, understood and accepted. This is not to say that establishing the by-task metrics at the entity level that satisfy the input information requirements at each level of rollup would not require both intellectual rigor and time. It will. But this is something the services already explicitly do now at lower levels and can figure out for more complex units; for composite reporting they and the joint commanders and DoD-level organizations would need to establish roll up criteria.[26] In fact, the MCAS prototype demonstrates that once the front-end effort is completed the system has the potential to reduce redundant reporting requirements and is useful to commanders not only as an indicator of current status but equally as a management tool. This is exactly what the DRRS Directive appears to have intended.

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26 All services appear to recognize the need for composite reports. The Army has a prescribed method, The Navy invented MCAS. The Marine Corps aggregates, albeit subjectively. And the Air Force has its certification process for AEFs.

ESORTS composite reports can and should be based upon a standard DoD methodology. The fact that under GSORTS the services either do not aggregate above entity level or do so using different methods makes meaningful joint composite reports impossible. This is inconsistent with DRRS requirements and should be rectified with a standard methodology. All services, combatant commanders and DoD would benefit from introduction of such a standard.

Table VII-5. Heavy Division Subordinate Unit Tasks Supporting ART 8.1.2 Conduct an Attack (Notional Example)

Unit	FM 7 – 15 Task #	Task
Division Command Posts	ART 7.1.1 & 7.1.2	Establish and conduct command post operations to support tactical operations and displace CP
Maneuver Brigade Headquarters	ART 7.1.1 & 7.1.2	Establish and conduct command post operations to support tactical operations and displace CP
Aviation Brigade Headquarters	ART 7.1.1 & 7.1.2	Establish and conduct command post operations to support tactical operations and displace CP
Engineer Brigade Headquarters	ART 7.1.1 & 7.1.2	Establish and conduct command post operations to support tactical operations and displace CP
Division Artillery Headquarters	ART 7.1.1 & 7.1.2	Establish and conduct command post operations to support tactical operations and displace CP
Division Support Command	ART 6.0 (modified)	Provide CSS during offensive operations
Mechanized Infantry Battalion	ART 8.1.2 (& ART 2.2)	Conduct an attack & (conduct tactical maneuver)
Tank Battalion	ART 8.1.2 (& ART 2.2)	Conduct an attack & (conduct tactical maneuver
Aviation Attack Battalion (AH –64)	ART 8.1.2 (& ART 2.2)	Conduct an attack & (conduct tactical maneuver
Cavalry Squadron	ART 1.3.3	Conduct tactical reconnaissance
Aviation Support Battalion (UH-60)	Art 6.1 & ART 6.3	Provide supplies & provide transportation
Artillery Battalion (155mm)	ART 3.0 (modified)	Provide fire support for offensive operations
MLRS Battalion	ART 3.0 (modified)	Provide fire support for offensive operations
Engineer Battalion	ART 5.1.1 & 5.1.2	Overcome barriers/obstacles/mines and enhance movement and maneuver
Signal Battalion	ART 7.2	Manage tactical information
Military Intelligence Battalion	ART 1.0 (modified)	Manage the intelligence battlefield operating system during offensive operations
Air Defense Battalion	ART 4.1	Prepare to defend against aerial attack and aerial surveillance
Chemical Company	ART 5.3.2	Conduct NBC defense

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Chapter VIII

USE OF STANDARDS IN READINESS REPORTING

The DoD Directive establishing the Department of Defense Readiness Reporting System (DRRS) specifically charges the secretaries of the military departments and the combatant commanders to "Develop resource and training standards for all organizations designated for inclusion in ESORTS."[1] They are also admonished to use the Universal Joint Task List (UJTL) or service task lists to develop mission essential task lists (METLs) in support of missions assigned by the Secretary of Defense. This paper is designed to describe the role of standards in readiness reporting and to attempt to eliminate the confusion over the difference between readiness output standards that are only implicitly required by the DoD Directive and the resource and training input standards used today in GSORTS and tomorrow in ESORTS.

The Universal Joint Task List (UJTL) defines a standard as, "the minimum acceptable proficiency required in the performance of a task." The UJTL provides specific criteria for a joint MET, "For mission-essential tasks of joint forces, each task standard is defined by the joint force commander and consists of a measure and criterion." As written, this definition appears to be applicable to readiness reporting as well as training. With some clarification, this appears to be the case. The clarification is provided below.

Key to understanding the use of standards in readiness reporting is the recognition that there are two types of standards, input standards and output standards, that are important to the concept of readiness reporting envisioned in DRRS. Readiness reporting today, e.g. GSORTS, uses input standards as the basis on which the GSORTS C-rating is determined. GSORTS input standards are expressed in terms of the personnel, equipment, supplies, equipment condition, and training that a measured unit is required to have in order to be fully ready. The commander of a measured unit compares his actual

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1 Department of Defense Directive Number 7730.65, *Department of Defense Readiness Reporting System (DRRS)*, June 3, 2002, Para. 5.4.5 and 5.5.4. Although the words differ, the intent for the Heads of the Defense Agencies is the same.

status with the standard and uses rules laid out in the CJCS instruction[2] to determine his status. That status is reported in a C-rating that is, in essence, a report on how much of a unit's wartime mission the unit is capable of performing. Since GSORTS does not include data on the nature of that work, there are no output standards in GSORTS.

READINESS INPUT STANDARDS

In the current GSORTS, readiness is a direct reflection of the status of the measured unit's resources and training—the input standards. GSORTS is based on the assumption that the status of a measured unit's resources and training, when compared to the resource and training standards established for that unit, provides an acceptable measure of that unit's readiness.

Resource standards

Each resource area—personnel, supplies, equipment and equipment condition—has input standards defined for each and every organization that reports in GSORTS.[3] In reality, every unit or organization in DoD—those reporting in GSORTS and those that do not—is based on a set of input standards that are found in manning documents, equipment lists, service guidelines, etc. In GSORTS, for example, a battalion that has a personnel standard of 580 personnel but has only 490 assigned personnel is 'below standard'; a squadron that that has an equipment standard of 18 aircraft and only has 16 available is 'below standard.' The GSORTS instruction contains algorithms that define the impact of lower than standard resource levels on a unit's C-rating.[4]

Training standards

The GSORTS training standards are different from the GSORTS resource standards in two ways. First, the GSORTS instruction provides considerably more flexibility to the military departments in the way they are required to report the training readiness of their measured units. For example, CJCSI guidelines allow the commanders of Army and Marine Corps ground units to estimate the number of days it would take for the unit to be fully trained in its METs, and thereby, declared "ready." On the other

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2 CJCSI 3401.02, *Global Status of Resources and Training System* (GSORTS), 20 October 1997. Each service has issued its own instruction based on the CJCSI.

3 This use of the term "standard" equates to authorized level of personnel, equipment, and supplies and required equipment condition.

4 See CJCSI 3401.02, *Global Status of Resources and Training System* (GSORTS) Appendix N for a complete discussion on all readiness ratings requirements and methods of calculation.

hand, aviation units and ships typically have a number of specific training events the unit (or its pilots) must have accomplished in order to be declared ready. Second, the determination of training readiness is generally less objective than the determination of resource readiness. With resource standards you either have the people and equipment or you don't. GSORTS training standards are not so absolute. Even when the training readiness standards involve specific training events, there is often an assessment of whether the training event was "performed to standard." In other words, the determination of training readiness in GSORTS is often based on the application of performance-based training standards.

READINESS OUTPUT STANDARDS

One of the major problems with GSORTS is that it does not provide commanders, especially joint commanders, the information they need regarding what it is a unit is ready to do. Perhaps the most important innovation of the DRRS is that it requires all measured units to answer to the "Ready for what?" question. This answer is provided in terms of the capability to perform a Mission Essential Task where the definition of the task is in terms of the output or work that the measured unit is capable of providing. It is in this context that output standards become important. Output standards are expressed in terms of the output or work a unit is expected to be able to provide when it executes a task.

ESORTS will provide readiness assessments in terms of readiness (capability) to perform a task. Every task an organization is required to perform, whether the task is established by the unit's designers or is assigned as a direct result of an operations plan, can be expressed in terms of work that must be done or output that must be provided. The services, defense agencies, and combatant commanders design units and organizations specifically to do some type and amount of work. In addition to these design tasks, a commander, especially a combatant commander, may assign a unit or organization a specific task based on the combatant commander's assessment of his mission requirements. We call these design tasks and assigned tasks. ESORTS must be built to facilitate the ability of measured units at every level of the chain of command to report readiness to perform both design tasks and assigned tasks.

Readiness to provide an output can be reported in two ways.

1. Readiness can be reported in terms of the actual work a measured unit is ready to provide. There are many different kinds of output metrics that might

be used depending on the type of unit. The simplest output metric will be in terms of a quantity of work per unit time, e.g., tons per day, ton-miles per day, gallons of water purified per day, sorties per day, etc. These metrics may have quality modifiers attached that describe, for example, the kind of sorties delivered per day or the accuracy of those sorties. More complicated metrics would be required for units whose output is harder to define, e.g. a ground combat maneuver unit or a headquarters. The problem with metrics of this kind in the context of a DoD-wide readiness reporting system is that it quickly becomes difficult for higher-level commanders to make sense of the many different metrics that would be reported and to know how the level of output reported relates to the need.

2. An alternative approach is to normalize the report by comparing the task output to a standard. The actual output, e.g., tons per day, must be available in ESORTS as needed but the reporting process would be greatly facilitated if the current output capability could be compared to a readiness output standard that represented the output associated with the design or assigned task.[5] The use of a readiness output standard would allow all unit readiness reports to be presented in percentage terms. This would free commanders at all levels from a requirement to know precisely what work they need from a specific unit and to focus on those reporting units whose readiness to do required work is less than that needed. This second approach would provide a simplified way of comparing the readiness of different units whose actual outputs differ while also providing information on the actual outputs provided by each unit. The remainder of this paper is based on the assumption that ESORTS will employ readiness output standards.

Units and organizations across the DoD are designed to do a certain amount of work or to produce an output. The term we apply to these design goals is an output standard. Since output standards for design tasks are the basis for a unit's design, they already exist in most cases. The challenge for the DoD components will be in translating the design documents into a readiness output standard usable in ESORTS. Although the Navy has taken the initiative to report in GSORTS in terms of METs (the Navy term for a higher-level MET is a Primary Mission Area (PRMAR)) the Navy has not tied its reports

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5 We envision the possibility that ESORTS will become an important deliberate and crisis planning tool and will need the information on the actual work a unit is designed to do and that it is capable of doing. See Chapter X for a more detailed discussion.

to a specific output, i.e., they have not included the specific amount of work performed when a ship performs an ASW task, for example. The Navy knows or should know what these standards are because they are documented in the Navy's design documents. The Army and Marine Corps have similar design documents. The Air Force is perhaps the closest to being able to implement ESORTS output standards because they have already defined the output of their measured units in terms of their METs. These standards are found in a unit's Designed Operational Capability (DOC) statement, although they are currently not explicitly referred to as such. Furthermore, the Air Force has identified output standards for each measured unit's sub-elements (UTCs) found in associated Mission Capability (MISCAP) statements. The majority of units that do not currently report in GSORTS also have design documents that should provide the basis for their efforts to identify design tasks and the output of those tasks.

Given the fact that planners in the deliberate planning process (part of the Joint Strategic Planning System) generally plan on using units in their designed roles, the majority of ESORTS measured units will base their reports on their design tasks. In many cases, however, a commander will call on a subordinate unit to perform a task that it was not specifically designed to perform. This may be true in the deliberate planning process as well as the crisis response process or in planning for peacetime activities. In any case, many units will be called on to report on the basis of their assigned tasks in addition to their design tasks. A peacekeeping task for a combat unit is an example of an assigned task that is quite different from a design task. Another example of an assigned task that differs from a design task arises when a measured unit, although performing the same design task, must alter its output due to the conditions in which the unit operates. For example, a unit whose design tasks were based on an assumption that they would be performed in a temperate climate might well have to alter its output to meet a different standard based on the combatant commander's needs in a harsh climate.[6]

THE ROLE OF THE JOINT TRAINING SYSTEM IN DRRS

GSORTS has been in use for many years and reflects a dated view of training. The IDA concept of the DRRS relies on the Joint Training System, an up to date approach to training, for a number of precedents. The most important of these are the use of the Universal Joint Task List (UJTL) as the taxonomy for all joint tasks, the use of service task lists as the taxonomy for service tasks, the use of Mission Essential Tasks as

6 See Chapter X for a discussion of how ESORTS can contribute to the planning process.

a basis for reporting, the use of a mission analysis process for identifying METs and a Mission Essential Task List (METL), and the requirement to assess a unit's readiness to perform a MET. The Joint Training Manual describes the process for developing a METL: "Comprised of tasks, conditions, standards, and responsible organizations, the METL documents the capabilities required for the commander to accomplish the missions assigned to the command, i.e. in order to accomplish [this mission], these organizations must accomplish [these tasks], under [these conditions], to meet [these standards].[7]

The UJTL was written for the joint training audience. The opening paragraph explicitly states: "This manual provides a standardized tool for describing requirements for planning, conducting, evaluating, and assessing joint and multinational training."[8] Therefore, the metrics associated with each task in the UJTL are performance based. And rightfully so. They are explicitly designed to assist in the design of training, in the assessment of training events as they occur, and in the evaluation of whether an organization is trained to perform a task to a given level of proficiency (standard) set by higher authority. This is also true for the service task lists.

In other words, as stated in the Joint Training Manual, training standards provide a way of expressing the degree of proficiency to which an organization must perform a MET under a specified set of conditions—"The standard should express how well a specific task must be accomplished to successfully achieve the defined objective(s) and accomplish the assigned mission."[9]

Although the UJTL definition of the term "standard" appears to be applicable to readiness reporting as well as training, the actual development of standards has created a difference. In the training world, a standard may be known as an MOE (measure of effectiveness) or a MOP (measure of performance). The standard is intended to be the goal toward which the unit trains and the basis on which the commander determines whether the unit is adequately trained to perform the task, i.e., trained to standard. In the context of training, both MOEs and MOPs are appropriate.

The concept of a Measure of Performance can include the concept of output or work performed. In DRRS, every MET needs to have an output associated with it. In the

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7 CJCSM 3500.03A, *Joint Training Manual for the Armed Forces of the United States*, 1 September 2002, Enclosure C, *Phase I (Requirements)*, p. C-5.

8 CJCSM 3500.04C, p. 1.

9 CJCSM 3500.03A, p. C-17.

determination of training readiness (one of the resource inputs) it would seem appropriate that a measured unit train to perform that output and that, when the measured unit is evaluated in the performance of a MET, that the ability to produce the output be a major criterion. As ESORTS is developed, the training standards in the UJTL and the service task lists will likely evolve in that direction. That is not the case today. Our review of the current UJTL training standards suggests that less than 5% of the training standards are output related.

The discussion below describes how training standards identified in the UJTL and the service task lists that currently form the basis for a training readiness input metric differ from the work-based output standards that will be key to DRRS/ESORTS.

READINESS OUTPUT STANDARDS VERSUS TRAINING STANDARDS

The preceding discussion makes the case that output-based readiness standards and performance-based training standards are both important to ESORTS. The challenge to ESORTS designers is to understand the difference. The following section illustrates this difference with a concrete example of a deployable F-16 UTC (that in peacetime is a subset of an F-16 squadron). The example illustrates "output standards" that can be derived from its Air Force Mission Capability statement (MISCAP) versus the performance-based "metrics" for that same entity as identified in the Air Force Task List (AFTL). The example clearly illustrates the difference between the designed output (work) standard of this entity and the performance standards (MOEs) of this entity.

The actual MISCAP for an F-16 UTC as written by the Air Force is as follows:

PROVIDES INDEPENDENT 6 SHIP FIGHTER SUPPORT FOR CONTINGENCIES AND/OR GENERAL WAR. SORTIE DURATION AND EXPENDITURE RATES ARE IAW WMP-5. CAN OPERATE UP TO 30 DAYS AT A BB FLYING WMP-5 RATES BASED ON MRSP. EMPLOYS CONVENTIONAL MUNITIONS DAY/NIGHT (INCLUDING PGMS LISTED ON UCML) IN THE SA, AI, OCA-S, CAS, SEAD-C, OCA-A, AND DCA ROLES. INCLUDES: COMMANDER, ADMINISTRATION, 1ST SERGEANT, OPERATIONS DATA MANAGEMENT, AIRCREWS, LIFE SUPPORT, INTELLIGENCE, AND FLIGHT MEDICINE.[10]

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[10] Acronyms: BB=Bare Base; WMP-5 = War Mobilization Plan (Part 5); MRSP = Mission Readiness Support Package; PGMS=Precision Guided Munitions; UCML=Unit Conventional Munitions List; SA=Strategic Attack; AI=Air Interdiction; OCA-S=Offensive Counter Air-S; CAS=Close Air Support;

Based on this mission capability statement, a notional METL, using current tasks as stated in the Air Force Task List would look like:[11]

- MET 1: Conduct Offensive Counterair (OCA-A / OCA-S / SEAD-C)
- MET 2: Conduct Defensive Counterair (DCA)
- MET 3: Interdict Enemy Land Power (Strategic Attack / Air Interdiction)
- MET 4: Conduct Close Air Support (CAS)

The Air Force Task List contains suggested performance-based training standards for each of these tasks. Obviously the following lists are not actual standards, as the criteria for each metric are left to the commander to determine and are not included in the AFTL.

- MET 1: Conduct Offensive Counterair (OCA-A / OCA-S / SEAD-C)

M1 Percent Of enemy air and missile power destroyed, neutralized, disrupted, or limited.

M2 Time Enemy air and missile power remains destroyed, neutralized, disrupted, or limited.

M3 Percent Of enemy air defense targets suppressed.

M4 Time Enemy air defense targets remained suppressed.

M5 Percent Of friendly forces protected from enemy air and missile attacks.

M6 Cost To conduct counterair function.

- MET 2: Conduct Defensive Counterair (DCA

M1 Percent Of attacking enemy air and missiles threats detected and identified.

M2 Percent Of attacking enemy air and missiles threats intercepted and destroyed or neutralized.

M3 Percent Of friendly airspace defended from enemy air and missile attacks.

M4 Time Friendly airspace remains defended from enemy air and missile attacks.

M5 Percent Of friendly forces, materiel, and infrastructure are protected from enemy air and missile attack.

SEAD-C=Suppression of Enemy Air Defenses-C; OCA-A=Offensive Counter Air-A; DCA=Defensive Counter Air.

11 Air Force Doctrine Document (AFDD) 1-1, *Air Force Task List (AFTL)*, 12 August 1998.

M6 Time Friendly forces, materiel and infrastructure remain protected from enemy air and missile attack.

M7 Cost To conduct DCA.

- MET 3: Interdict Enemy Land Power (Strategic Attack / Air Interdiction)

M1 Time For operations designed to demoralize the enemy to achieve desired effects.

M2 Percent Desired strategic effects achieved.

M3 Cost To conduct operations designed to demoralize the enemy.

- MET 4: Conduct Close Air Support (CAS)

M1 Time For operations designed to degrade enemy assets to achieve desired effects.

M2 Percent Desired strategic effects achieved.

M3 Cost To conduct operations designed to degrade enemy assets.

As described above, the Air Force has developed work-based standards for most tasks. These standards are found in various guidance documents (but not in the AFTL).[12] Using these standards as a basis, the example F-16 UTC's METL can be re-written as follows:[13]

- **MET 1:** Conduct 15 day and/or night *Offensive Counterair* (OCA-A / OCA-S / SEAD-C) sorties expending up to 15 AMRAMM and/or 20 HARM munitions per day for up to 30 days.
- **MET 2:** Conduct 15 day and/or night *Defensive Counterair* (DCA) sorties expending up to 15 AMRAMM and/or 20 HARM munitions per day for up to 30 days.
- **MET 3:** Conduct 15 day and/or night sorties to *Interdict Enemy Land Power* (SA / AI) expending up to 30 JDAM munitions per day for up to 30 days.

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12 For this METL, the work-based standards are imbedded in the actual MET wording. An alternative and acceptable option is to list each task in more generic terms, and define the standard in follow-on explanatory information, as is currently done with "conditions."

13 This example is notional. In actuality, the Air Force derives this type of output task statement from various guidelines, such as *War Mobilization Plan, Part* 5 (WMP-5) that contains sortie duration and munitions expenditure rates, and other documents that provide information regarding aircrew manning, aircrew to aircraft ratios, etc. In this example, and generally in actuality, these four METs are not additive, i.e., all four tasks cannot be conducted simultaneously to their full extent. The limiting factor is 15 sorties per day. Within this limit, any combination of the four tasks could be performed (e.g., 8 counterair and 7 interdiction).

- **MET 4:** Conduct 15 day and/or night *Close Air Support* (CAS) sorties expending up to 30 JDAM munitions per day for up to 30 days.

The revised METL now has each task the unit is to perform written in terms of the work (output) the specific task requires. METs written in this format allow the entity commander to directly answer the "Ready for What?" question posed by his superiors (especially when tied to resources and training status). For example:[14]

"I am fully ready to do my assigned task of conducting *defensive counterair* (MET 2)."

"I am only partially ready to *interdict land targets* (MET 3) because I am missing several LANTIRN targeting pods and do not have a full complement of JDAM munitions."

"I am not ready to conduct *close air support* (MET 4) because my pilots have not had any CAS training with Army units in the past six months."

Because the standards currently stated in the Air Force task list are training oriented and focus on outcomes rather than outputs, they do not provide the answer to the "Ready for What?" question. While the training standards listed in the task list are useful for training, they need to be modified before they can be used as readiness-related output standards. For example, it would not be useful for a commander to report his readiness to perform MET 2 (as written on page 8) by stating "I am ready because in my last exercise my unit intercepted and destroyed or neutralized 90 percent of attacking enemy air and missiles threats." Such a statement may reflect the training status of the pilots in the unit; it says nothing about the status of the unit's other personnel, its equipment, or the condition of that equipment. In addition, it does not relate that training outcome to the unit's readiness standard.

CONCLUSION

The "standards" found in the UJTL and service task lists are training standards. Most of them are unsuitable for use as readiness output standards. Most are not defined in terms of work a unit or organization is to perform; instead, they provide a number of areas that can serve as a training goal or where the level of training can be assessed as a

[14] The revised METL also allows the Chain of Command to make better-informed decisions regarding the utilization of this entity. In the current system, the entity would probably be considered C-3 (for training and equipment) and thereby not be considered for use by the JFACC or deployable by the Air Force. However, if the combatant commander/JFACC does not require this entity for strike operations but only for counterair operations, this entity is still a valuable deployable combat unit.

task is performed. By their nature, performance-based training standards (MOEs & MOPs) are execution-related, not capability-related. These are essential as a basis for determining if a measured unit is trained in a particular MET. The majority of them are not appropriate for use as output standards against which readiness can be measured.

Work-based standards are already established for many units, whether they are currently considered as such or not. It is these standards that should form the basis for readiness reporting in the DRRS. The services design units to do work, i.e. provide an output. They know a unit's METs, PRMARs or DOC statement (and MISCAPs).[15] Unit documentation contains detailed descriptions of tasks, including the desired output for each task and the resources and training required to perform these tasks. The combatant commanders and heads of the defense agencies have similar information about their units and organizations.

If ESORTS is to follow the precedent established by GSORTS of measuring the status of resources and training, the ESORTS developers will have to incorporate the kinds of training standards identified in the UJTL and the service task lists into the ESORTS input standards. If ESORTS is to provide a useful way for combatant commanders to make sense of the capabilities of the many measured units that must work together to in a system to perform a combatant commander's METs, it seems reasonable that ESORTS must include output standards like those described above. If ESORTS is to be based on the use of output standards, it seems reasonable that the UJTL and the service task lists should also incorporate output standards. If the DoD components are to build an effective ESORTS, they must establish both input and output standards for all of their measured units.

[15] The Army and Marine Corps are already users of the MET construct. The Navy uses the term PRMAR (Primary Mission Area) as a MET-like construct. The Air Force defines a unit's mission in a DOC (designed operational capability) statement; MISCAPs are used by the Air Force at the sub-unit (UTC-Unit Type Code) level for the same purpose.

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Chapter IX
UPDATING THE UJTL TO SUPPORT READINESS REPORTING

The Universal Joint Task List (UJTL) is intended to be a comprehensive hierarchical listing of the tasks performed by the US military. The list of tasks grew out of an effort to refine the manner in which joint forces prepare and train for joint operations. Thus, the context for the development of the UJTL has been the training environment, and the focus of the UJTL has been on the identification of tasks and related standards that will facilitate planning for and assessing joint training.

The DoD directive that establishes the Department of Defense Readiness Reporting System (DRRS) requires the service secretaries, combatant commanders, and heads of defense agencies to develop mission essential tasks or MET-like constructs for the purpose of reporting their readiness to execute assigned tasks or Title 10 functions. The directive further requires the combatant commanders, service secretaries and heads of defense agencies to base their mission essential tasks on the UJTL, service task lists, or unique agency tasks.

Thus, readiness reporting under the new DRRS is to be accomplished using a construct originally created to support joint training. The UJTL and the service and agency task lists represent a useful compendium of tasks for trainers. These task lists also provide an appropriate foundation for reporting readiness based on mission essential tasks (METs). However, in their current form the UJTL and the service/agency task lists have a number of shortcomings that require modification in order to create a list of tasks that is usable for readiness reporting.

First and most importantly, each service and agency has its own task list. The services were required to create these lists of "tactical tasks" as a follow-on to the strategic and operational level tasks of the UJTL. Defense agencies are also required to have agency tactical task lists. Unfortunately, these task lists do not align well with the UJTL and, therefore, make it difficult to create complete hierarchical task trees that describe all DoD activities for which readiness should be reported.[1]

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[1] A hierarchical task tree is a graphical representation of the interrelationships between a set of tasks. Appendices D, E and F use task trees to illustrate a task, its subordinate tasks (i.e., those that contribute

Briefly reviewing the service task lists:

- It appears that the Universal Naval Task List (which includes Marine Corps and Coast Guard tasks) attempts to align with the UJTL at the Operational level. However, since it must also support strategic level tasks that are not carried down to the operational level, there is not a consistent correlation.
- The Army is very clear in stating that its task list does not conform to the UJTL. Army FM 7-15 states (p. xi): "The six UJTL tactical task list areas do not reflect how the Army has traditionally organized its physical means (soldiers, organizations, and equipment) to accomplish tactical missions. The Army organizes the Army Tasks (ARTs) contained in this manual under the seven battlefield operating systems (BOS) instead." However, the Army then adds an eighth ART, which it labels as tactical mission tasks and operations: ART 8.0 Tactical Mission Tasks and Operations. Thus, the Army's overall tactical task list is based not on tasks, but on the physical means (soldiers, organizations, and equipment) that commanders use to accomplish missions.
- The Air Force Task List (AFTL) is structured on the Air Force core competencies and their command and control (C2) and, thus, does not align to the UJTL. It is interesting to note the Air Force view of the UJTL as expressed in the AFTL: "The UJTL's horizontal structure reflects a relationship with the Army's battlefield operating system (BOS). While the BOS have served the Army in organizing and performing needed tasks on the battlefield, they are insufficient to organize or to reflect the potential of aerospace power."
- Thus, while the Army claims that the UJTL does not reflect how the Army organizes, the Air Force sees the UJTL as a reflection of the Army's BOS. Neither service aligns its tactical task list to the strategic, operational and tactical levels of the UJTL.

The reality is that the UJTL and the service and agency task lists should be designed to meet the needs of the combatant commanders. Given the many differences in the existing service task lists, it is difficult to see how a combatant commander could make effective use of the information they provide. If the concept of task lists were to meet the needs of combatant commanders, it would seem reasonable to have all the task lists written in joint terms. This is true for tasks that are common across services, e.g., combat search and rescue, as well as for task that may be unique to a given service or agency. This appears to be the best way for the combatant commander and his staff to

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to the primary task's completion or precede the primary task in either space or time) and its subordinates' subordinate tasks for three different DoD systems.

understand and make use of the capabilities a service or agency provides the combatant commander.

Accordingly, rather than have multiple service and agency task lists, it seems reasonable to have a single, universal task list that includes every task whose readiness might be reported in ESORTS. This universal task list would include all of the service Title 10 functions—man, train, and equip the force, as well as all functions mandated for the various defense agencies. Each service and agency task would be capable of being linked to the mission essential tasks of the combatant commanders. Services and agencies would identify tasks that are applicable to them on this truly universal joint task list. There would be no question of task alignment, since all units would be selecting tasks from the same task list.

The universal task list could also do away with the current distinction made for strategic, operational, and tactical tasks. Currently, there is no logical flow of tasks in a neat hierarchy (i.e., a clear linkage from a major task through its sub- and sub-sub-tasks) in the UJTL. The separate service task lists are both redundant and often incomplete and compound this lack of coherence within the organization of UJTL tasks. In other words, while there may be a relationship between tasks identified at the strategic, operational, and tactical levels of the UJTL, the UJTL does not present a complete or coherent breakdown of each major task into its doctrinal components or sub-tasks. For example, the task of moving forces from home station into theater assembly areas cannot be tracked in the current UJTL by using that document's task numbering system. In the transition from the task "move forces from POE to POD" to the task "provide onward movement in the AOR," the UJTL numbering goes from SN 1.2.5 to ST 1.1.2.3.

Additionally, assigning tasks to the different levels of war is an artificial construct that does not appear to aid in the development of task trees. A given task frequently can be accomplished by organizations at every level of war—only the scale is different. Providing sustainment or logistic support, for example, is a task that is carried out by organizations at every level and in every venue. What changes are the conditions and standards for accomplishing the task. Many organizations are responsible for providing POL products, but the standards and conditions for DLA are entirely different than those for a Navy oiler. The key point here is that the emphasis needs to remain on establishing a hierarchy of tasks and not on any effort to define a priori who will accomplish each task or at which level of war it will be performed.

Consistent with this approach, all tasks should be considered joint tasks, in that all tasks ultimately support joint commanders in executing joint missions. It has been fundamental to the UJTL that the tasks identified and defined in the UJTL provide a menu for commanders of "what" tasks can be performed without specifying "how" they will be performed or "who" will perform them. The existence of separate service and agency task lists that suggest a particular task is the responsibility of one organization, as well as specifying that specific tasks belong to specific levels of war, is contrary to this thinking. The inefficiency created by separate task lists is further illustrated by the redundant listing of the same task in multiple lists.

Finally, the inconsistencies evident in comparing the task hierarchies of the services serve as an impediment to defining clear-cut requirements, whether they are for training or for readiness reporting. Two good examples of where this alignment breaks down today are in the areas of command and control and operational protection. The UJTL delineates tasks for air space control and IFF. The Army and Navy have corresponding tactical tasks. The Air Force, to which these tasks clearly apply, does not include them in the Air Force Tactical Task List.

While the creation of a single joint task list that comprises all tasks to be accomplished, by DoD, civilian, or even allied or coalition organizations, should be the first priority in revising the UJTL, there are other improvements that are needed and that should be undertaken in parallel with the creation of a single task list:

- Use the mission requirements (OPLANS, CONPLANS, etc.) of the combatant commanders as the basis for developing task lists. Use the planning documents of the services and defense agencies to identify subordinate tasks in support of combatant commander tasks. Write the tasks so that they are applicable equally to planning, training, readiness reporting, and the expression of acquisition requirements. Having available a single frame of reference that is applicable to every aspect of the department's activities would be of tremendous value to decision makers concerned with either operational or resource allocation decisions. For example, it could lead to correction of the current force structure imbalances that are reflected in the persistent existence of high demand/low density (HD/LD) capabilities.
- Ensure tasks can be expressed in terms of outputs. Today, only 3% of UJTL measures express outputs. Outcome and process measures in the current UJTL should generally be redrafted as outputs.

- Ensure that standards for all tasks include both readiness output standards and training standards that are meaningful and can be measured.[2]
- Eliminate redundancies in the UJTL. For example, the UJTL contains the task OP 3.2 Attack Operational Targets and the task OP 3.2.5 Interdict Operational Forces/Targets. It is not clear that there is any significant difference in those two tasks. Furthermore, the supporting/subordinate tasks that would be required in each case appear also to be similar, if not identical.
- Ensure that the one-line definitions of tasks are descriptive of the actual tasks being considered and are consistent with the longer explanations of the tasks.
- Ensure that each task is actually a discreet task. Many of the explanatory remarks in the task descriptions actually contain tasks that are either parallel (should be listed as a separate task) or subordinate (should continue down the decimal numbering system).
- Develop task trees that provide further discrimination of tasks. In other words, there needs to be an entire task tree associated with most tasks, not simply one "place holder" task. For example, strategic national task "SN 6.6.3 Expand Logistic Support" currently is the only identified task related to mobilizing the military production base, the national industrial base, and the supply production base—as well as mobilizing numerous other support capabilities. This is a perfect example of how the current UJTL is designed primarily as a tool for managing training. We do not train on industrial mobilization, and therefore those who wrote the UJTL apparently saw no need to include separately the many tasks associated with mobilization.
- Establish tasks related to the conduct of joint training.

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2 See Chapter VIII for a more detailed discussion of this topic.

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Chapter X
A POTENTIAL ROLE FOR DRRS AND JOINT TRAINING SYSTEM IN PLANNING AND OPERATIONS

The central purpose of DRRS is to provide commanders at all levels the ability to answer the question "Are you ready to conduct your mission?" These missions are reflected in plans, both deliberate plans, written in peacetime, and crisis plans, written for an actual operation. By stating his unit "ready" to conduct a mission, a commander is essentially stating the organization's readiness to perform the tasks as outlined in applicable plans. The central purpose of the Joint Training System is to facilitate the ability of joint commanders at all levels to train their joint forces in joint tasks. Both DRRS and the JTS have been developed under the overall supervision of the Deputy Under Secretary of Defense (Readiness).

The Enhanced Status of Resources and Training System (ESORTS) is the major DRRS tool and is to be designed to improve the tracking and reporting of readiness throughout the Department of Defense. The Joint Training Information Management System (JTIMS) is the major tool of the Joint Training System (JTS) and is designed to improve training plans as well as the tracking and conduct of training. Because of the close linkage between readiness reporting, training, and planning, DRRS/ESORTS and JTS/JTIMS have the potential to play major roles in the planning process.

The ESORTS and JTIMS tools can be helpful for more than simply tracking readiness and training status. Two of their more obvious applications are as tools to more efficiently plan operations and to track the status of organizations in an operational context. This chapter provides a discussion of how DRRS/ESORTS and JTS/JTIMS can interface with both the deliberate planning and crisis planning processes that are part of the Joint Operation and Planning System (JOPES). It uses examples from the ESORTS and JTIMS software to illustrate how these tools can provide important information to planners.[1] The two software systems contain features that can provide a wealth of

[1] The JTIMS software is currently being used by most of the DoD training community, although not all features are used universally. The ESORTS software from which the majority of the following figures are taken is a prototype tool developed by IDA using commercially available Visual Basic software.

information that can be extremely useful to the entire planning community. The chapter's final section describes the potential usefulness of ESORTS and JTIMS for providing status information on a day-to-day basis in both peace and war.

DELIBERATE PLANNING WITH DRRS/ESORTS AND JTS/JTIMS

Deliberate Planning in Theory

The deliberate planning process called for in JOPES is a three-step process. First, planners conduct a detailed assessment of SecDef-assigned missions. This step breaks down the broad, general mission statement into its stated and implied component parts. Following this step, planners then identify the tasks associated with each of the component parts. These tasks usually can easily be grouped into separate "systems of systems" or "families of systems" to ease contextual understanding. Finally, deliberate planners identify the actual organizations that are responsible for providing the capabilities required to perform each task. The tasks identified in the JOPES planning process are not METs taken from the UJTL but they could be. In this chapter we will discuss tasks as though they were all drawn from the UJTL or, as we recommend in Chapter IX, from a Universal Task List.

To illustrate how DRRS/ESORTS can contribute to this process, let us look at one of the component systems that is integral to all deliberate plans, the Defense Transportation System (DTS).[2]

Regardless of the actual mission context, the DTS can be expected to have "Support the Strategic Deployment of Operational Forces" as one of its METs. Performance of that MET (currently stated in the UJTL as SN 1.2, Conduct Strategic Deployment and Redeployment") is dependent on a number of subordinate tasks that can be arranged in a hierarchical manner. This hierarchy is shown in Figure X-1.

This prototype was developed by IDA as a proof of principle and may be significantly different from the design that OSD ultimately decides upon. All entries in the figures, i.e. the tasks, organizations, and the numbers associated with the resource and training inputs, are notional and for illustrative purposes only.

2 The following Figures are from the ESORTS prototype and reflect the task deconstruction example found in Appendix D.

3 This chapter is based on the work product of Mr Harry Rothmann and other members of the Dynamic Research Corporation under contract to IDA in response to a specific request from our sponsor to include Mr Rothmann, with his specific expertise in JTIMS, in this project.

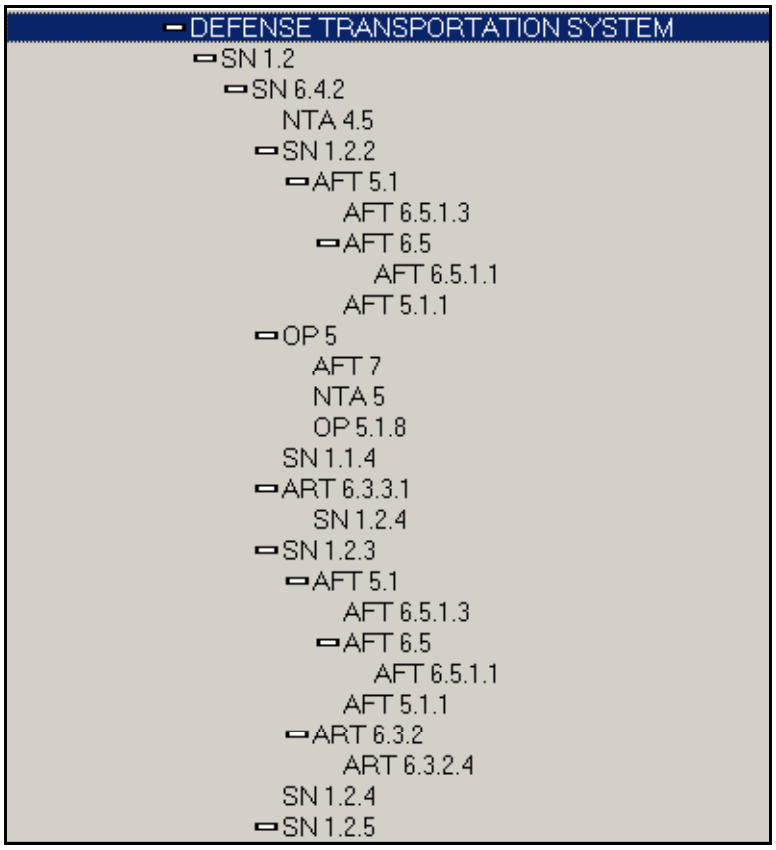

Figure X-1. The DTS' Deployment METL Hierarchy[6]

During deliberate planning, planners would identify the tasks required for overall mission performance based on their mission assessment and then arrange them in this type of hierarchical fashion. This results in a neat and easily understandable format of tasks—essentially the METL for the DTS—and completes steps 1 and 2 of the planning process.

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4 The JTIMS software is currently being used by most of the DoD training community, although not all features are used universally. The ESORTS software from which the majority of the following figures are taken is a prototype tool developed by IDA using commercially available Visual Basic software. This prototype was developed by IDA as a proof of principle and may be significantly different from the design that OSD ultimately decides upon. All entries in the figures, i.e. the tasks, organizations, and the numbers associated with the resource and training inputs, are notional and for illustrative purposes only.

5 The following Figures are from the ESORTS prototype and reflect the task deconstruction example found in Appendix D.

6 Figure 1 is a direct screen capture from the IDA ESORTS prototype tool. The hierarchy is read from left to right.

In this example, the task SN 1.2 is dependent on the accomplishment of four second-level tasks: SN 6.4.2 (Provide Transportation for Mobilized Units & Individuals); SN 1.2.1 (Integrate deployment systems); SN 5.4 (Provide Strategic Direction to Forces Worldwide) and ST 1.1.6 (Coordinate/provide pre-positioned assets/equipment). These tasks also have subordinate tasks, which in turn are themselves dependent on a set of subordinate tasks. Figure X-1 illustrates this in detail for task SN 6.4.2, in some instances extending the task hierarchy down five levels into the Air Force Task List.

The third step involves identifying the various units that are designed to accomplish each task. Figures X-2 and X-3 show an example of the end product of this step. Note that in both figures, specific units are associated with each of the two highlighted tasks (ART 6.3.2 "Conduct Terminal Operations" and AFT 6.5.1.3 "Perform Air Mobility Support"). By using ESORTS in the planning process for both identifying tasks and assigning organizations, readiness status can be automatically displayed for each and every organization. Although the planners themselves are not concerned with actual unit readiness while they construct plans, other users of the ESORTS tool, especially commanders and resource managers in the services, would find the detailed readiness data extremely useful for confirming the ability of their respective organizations to perform METs and for identifying capability shortfalls.

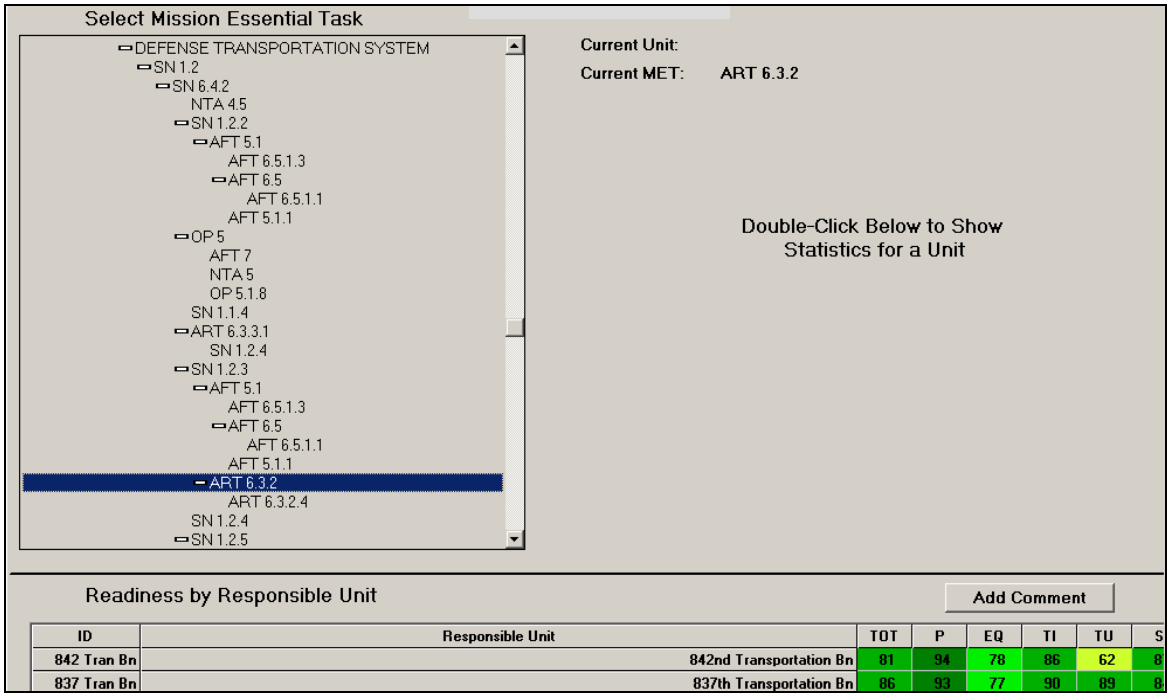

Figure X-2. Conduct Terminal Operations

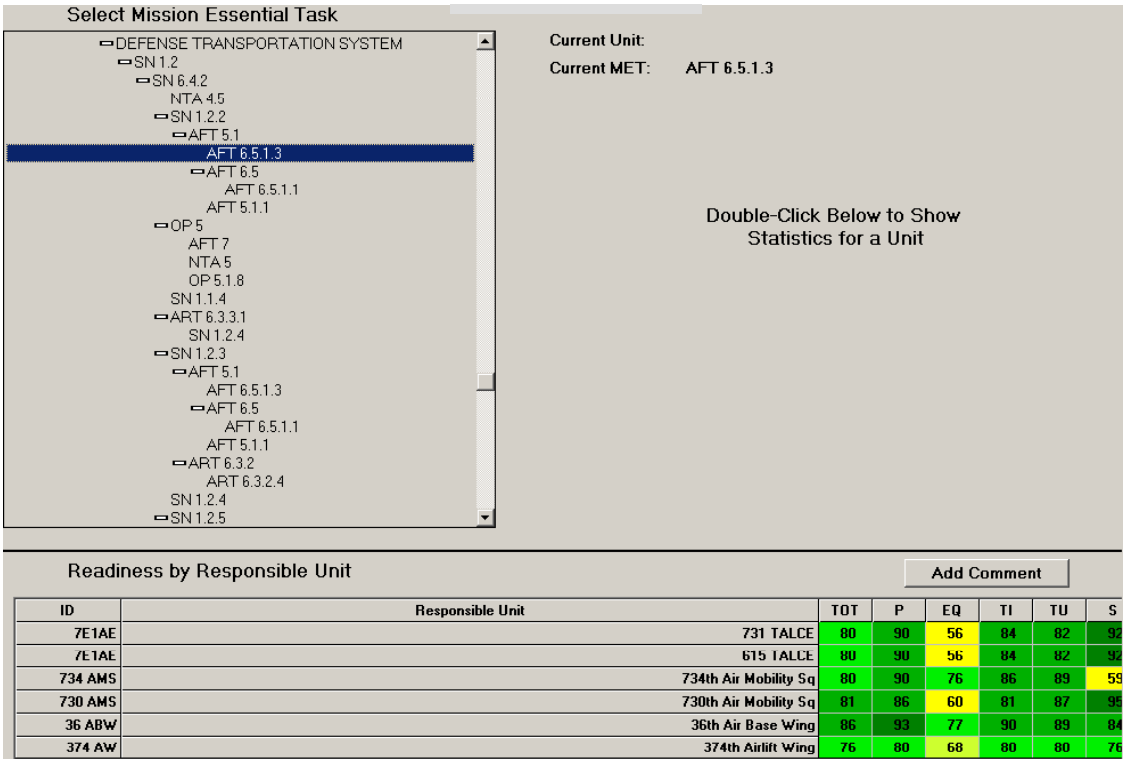

Figure X-3. Perform Air Mobility Support

Deliberate Planning in Actuality

The three-step JOPES process discussed above has already been accomplished for the missions assigned in the Contingency Planning Guidance. Numerous OPLANS and CONPLANS currently exist that list, to some degree, the tasks that need to be accomplished in order to conduct the plan. Additionally, many of the forces (particularly the major combat forces) are currently apportioned in the JSCP to the various plans. These forces presumably conduct a similar assessment process themselves to identify the METs that flow from the tasks specified in the plan and to provide the basis for their subordinates to do the same.

JOPES details the standardized format that deliberate plans are to be written in. The JOPES manual explicitly requires planners to identify the tasks that must be performed at different stages of OPLAN execution. For example, the manual requires

planners to "Identify the major tasks for each of the five elements of Information Warfare (IW)."[7] Regarding logistics, planners are to:[8]

(1) Assign logistic support responsibilities to service component commanders and define the logistic support required from other commands for preparation of supporting plans.

(2) Assign support responsibilities to joint boards, such as for transportation and procurement, and others providing services.

In other words, the manual requires planners to identify the METs associated with the deliberate plan. Interestingly, the JOPES manual does not make any reference to the JTS nor does it require that the tasks be written in terms of the Universal Joint Task List. (UJTL). We believe the development of DRRS/ESORTS will naturally lead to a common universal task list that will serve as a basis for planning and readiness reporting

The ESORTS tool can make tracking the readiness of the numerous organizations that contribute to a deliberate plan quite simple. Appendix F of this document details IDA's efforts to do an OPLAN to Task deconstruction. Once that deconstruction was completed and task hierarchies formed, the information was transferred to the IDA ESORTS prototype as reflected in the following figures.

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7 CJCSM 3122.03A, Joint Operation Planning and Execution System, Volume II, Planning Formats and Guidance, June 1, 1996, p. C-150.

8 Ibid. p. C-242.

Figure X-4 shows the METL related to the sustainment of theater forces (UJTL task ST 4). We built this METL using doctrinal definitions from Joint Publication 1-04 (*Department of Defense Dictionary of Military and Associated Terms*) and Joint Publication 4-0 (Doctrine for Logistic Support of Joint Operations).[9] Note that the six broad functional areas of logistics and their accompanying subsets are included in this view. A planner can easily see, and if necessary, chose to add or delete, the doctrinal tasks that must be performed in order to sustain theater forces.

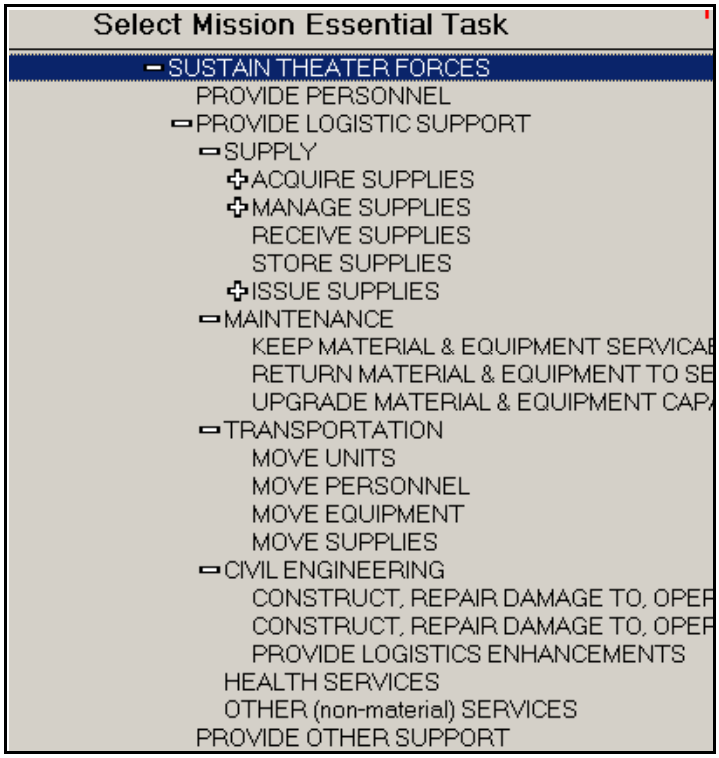

Figure X-4. METL for Sustain Theater Forces

Once a deliberate plan is constructed and all the METs identified, the detailed task trees can be imported into the ESORTS tool. Properly identifying the primary and subordinate tasks is integral to this process. Using the tasks identified in the logistic annexes of an existing OPLAN, Figure X-5 shows several of the task hierarchies associated with the functional areas. As mentioned earlier, the OPLANS are not currently written using UJTL terminology.

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9 Due to the limitations of computer software, some of the words for many of the tasks in the figures are missing. The full text for all tasks can be found in Appendix F.

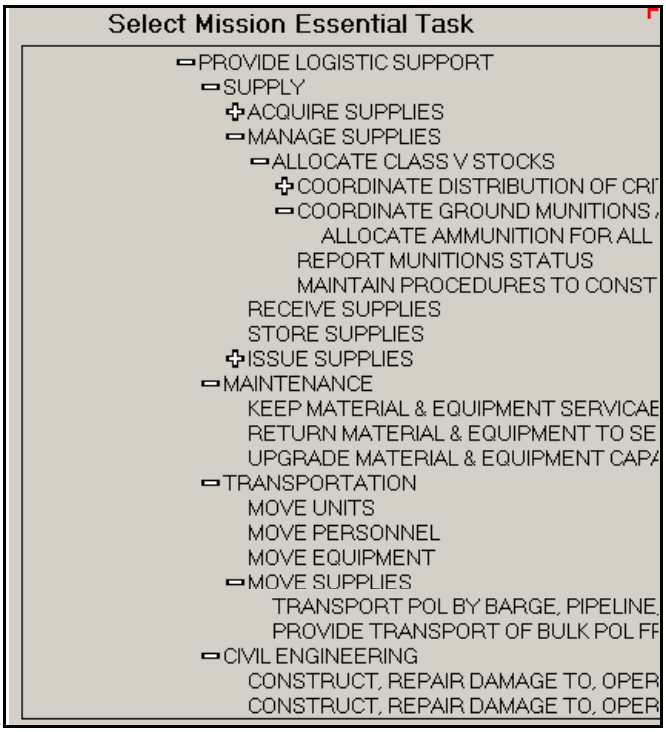

Figure X-5. OPLAN task deconstruction

The power of the ESORTS tool in deliberate planning can be tremendous. Deliberate plans identify not only the tasks that must be performed, but also in most cases corresponding responsible units. This information would also be available in the ESORTS tool. Figure X-6 shows an example of the organizations assigned the responsibility of providing petroleum, oil and lubricants (POL) to the theater forces. Figure X-7 shows the same for the task "Provide transport of bulk POL from out-of-country defense fuel supply points." Once the unit designations are input into the tool, their respective readiness status is available for all users.

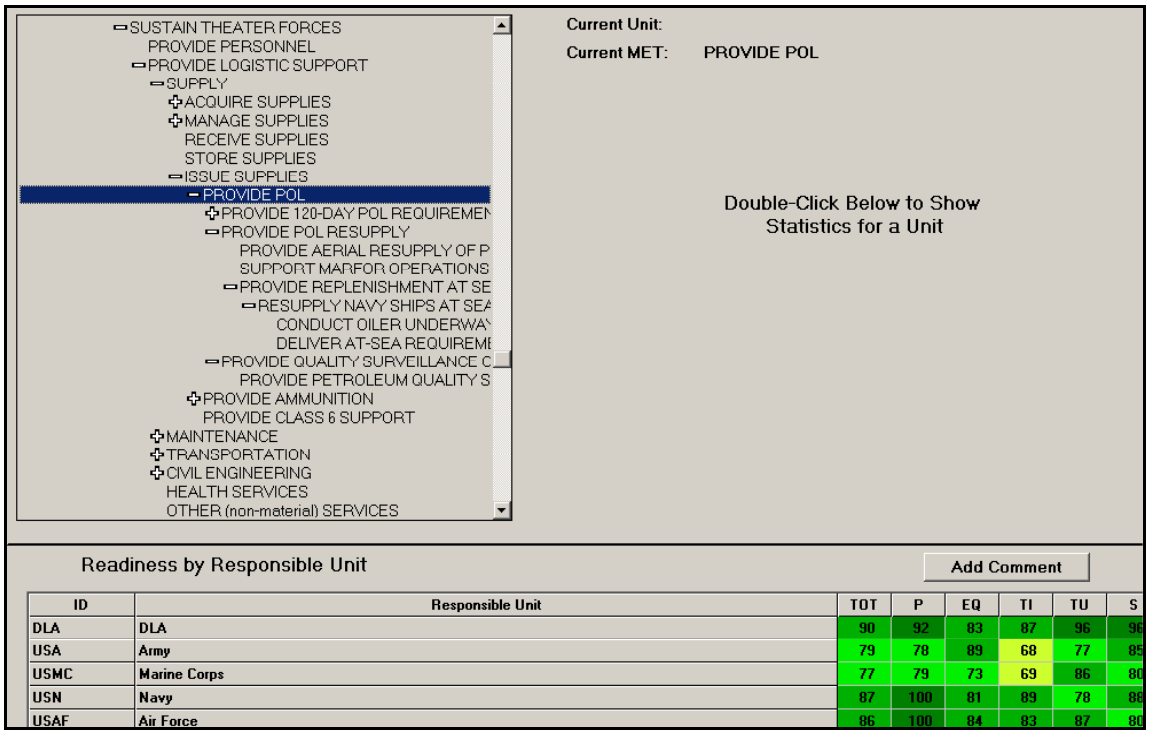

Figure X-6. Responsible Organizations for Provision of POL

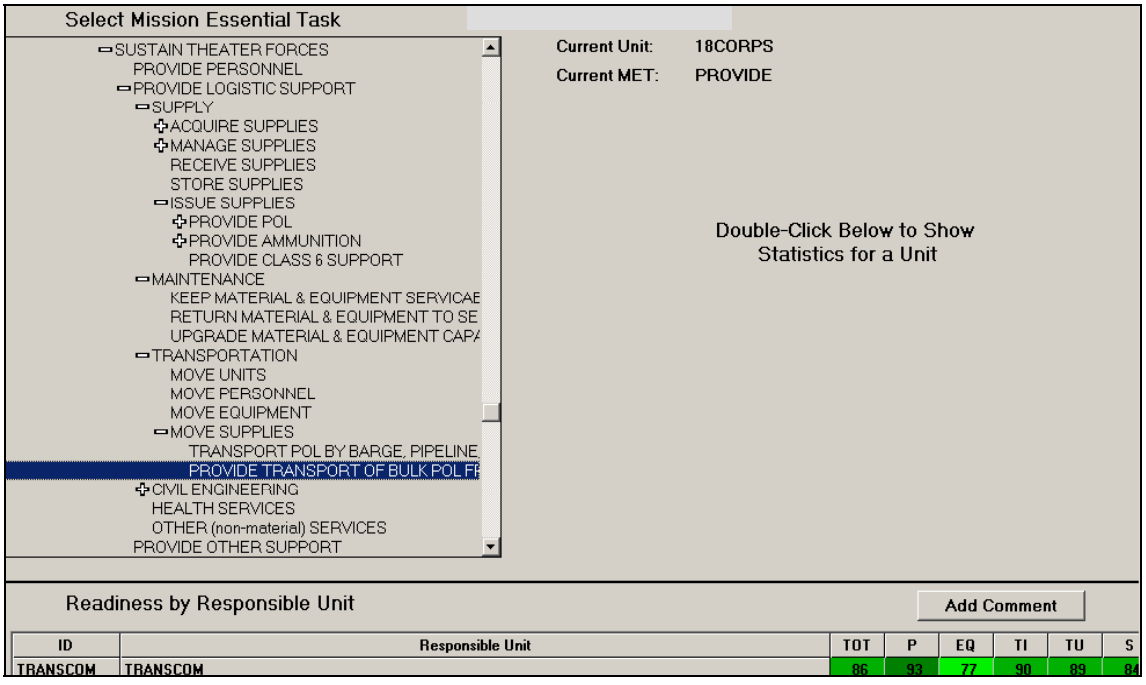

Figure X-7. Responsible Organizations for Transporting Bulk Fuel

OPLANS as currently written have a major shortcoming—they tend to stop assigning tasks at a fairly high level. We found few tasks in the OPLAN logistics annexes that would be performed by organizations much below the level of the service or combatant commander components. Figure X-8, using the task "transport POL by barge, pipeline, tank truck, tank car, coastal tanker as appropriate" shows how ESORTS could be used to report readiness by task down to the lowest measured unit.

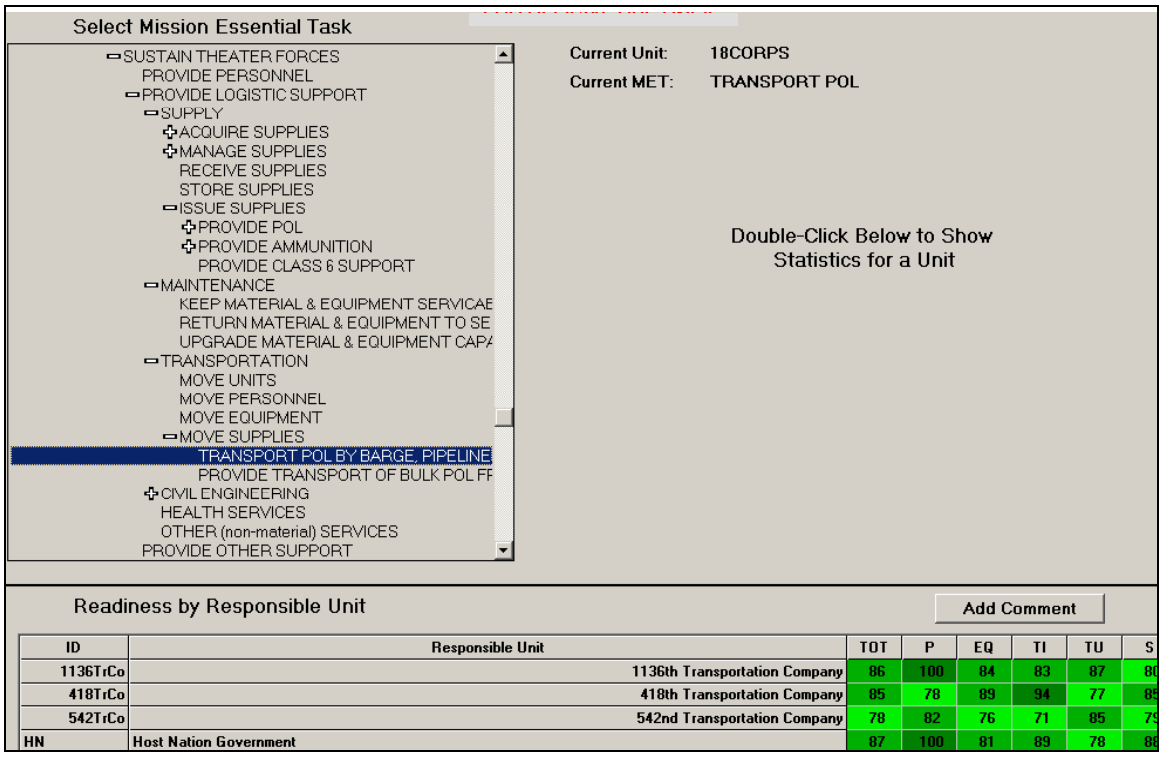

Figure X-8. Responsible Organizations for Transporting Fuel in Theater

We would expect that a marriage of JOPES and ESORTS would provide this level of detail for all the tasks required to execute an OPLAN. Appendix F details what steps need to be taken to deconstruct an OPLAN to the full extent. This kind of deconstruction requires insight into supporting plans, SOPs, and general guidance documents of all DoD components. Once this is done, the information is readily transferable to the ESORTS tool and can then be available to commanders and resource managers throughout the Department. The following two figures illustrate the end result of such a full deconstruction effort. The identified tasks are not found in the OPLAN

logistics annexes, but are derived from knowledge of the Tomahawk supply system. Note that none of the four organizations responsible for performing the task—coordinate Tomahawk distribution—currently report in GSORTS but would report in ESORTS. Clearly, their readiness to perform the assigned missions is integral to the OPLAN's success. In the case of the task—manufacture Tomahawk missiles—a commercial firm is identified. In this case, it would likely be the Navy's responsibility to monitor and report as Raytheon's readiness.

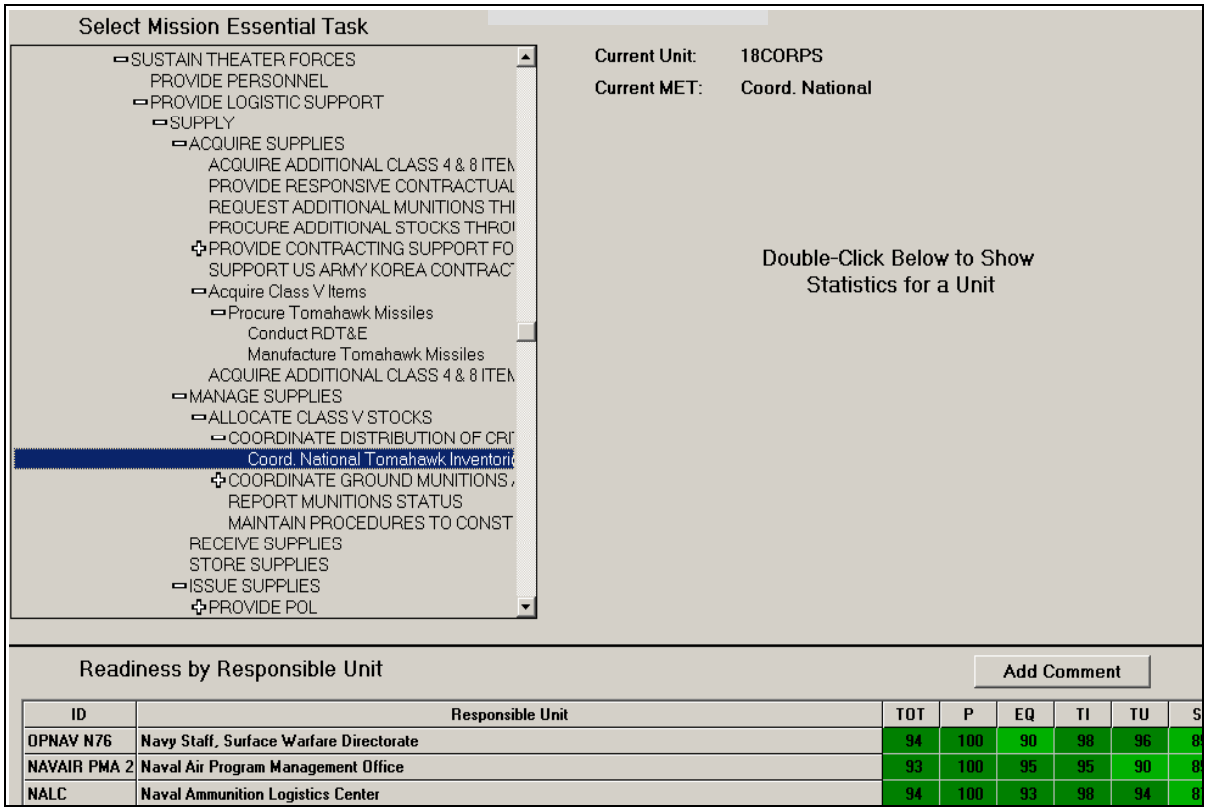

Figure X-9. Coordinate National Tomahawk Inventories and Movements

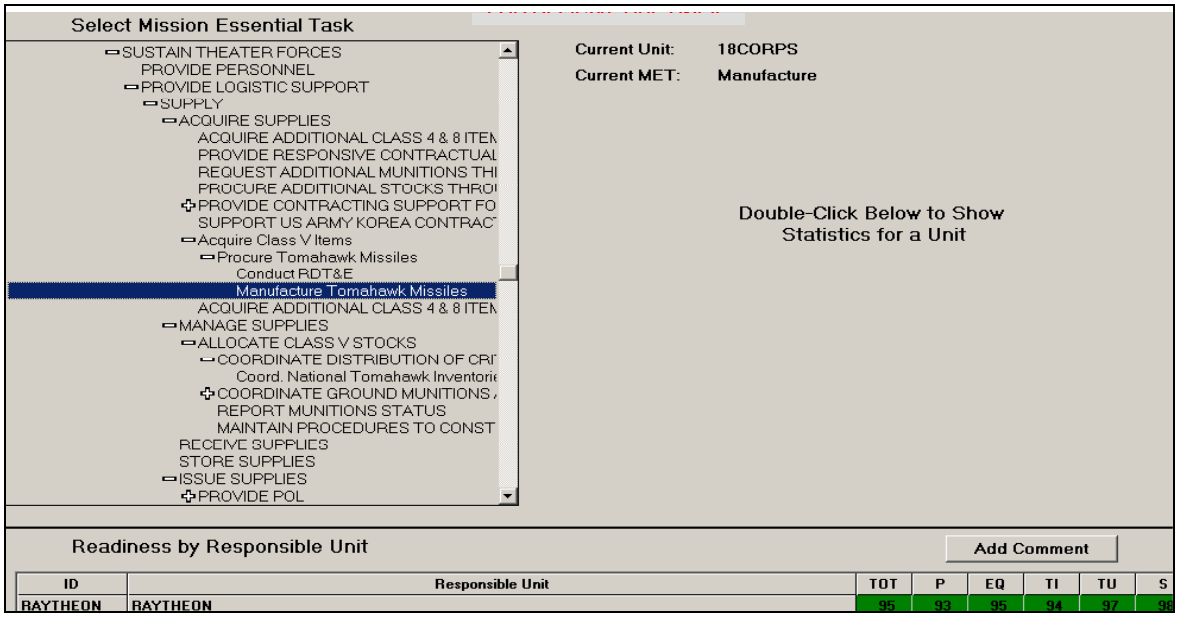

Figure X-10. Manufacture Tomahawk missiles

CRISIS PLANNING WITH ESORTS/JTIMS

Crisis planning essentially follows the same three-step process as deliberate planning. The major difference between the two is the time available to fully construct the plan. Where a deliberate plan may take two years to develop, a crisis plan, by its very nature, does not have this luxury. In this regard, the ESORTS tool has the potential to provide a major increase in planning efficiency.

Take the example of a developing crisis situation where one of the component tasks identified by the planners is to conduct a (or a series of) precision strike operation.[10] The planner's next step is to identify the numerous subordinate tasks that must be performed in order to conduct the operation. Here, JTIMS can provide an invaluable tool.

The JTIMS software will contain a number of pre-determined "templates" that deconstruct higher-level METs into subordinate and other contributory tasks.[11] These templates are tasks hierarchies just as in ESORTS. In this example, they are arranged in a graphical view and are constructed based on current joint doctrine. Figure X-11 shows an example of one such template. Reading from left to right, one can see the spectrum of subordinate tasks that contribute to task OP 1.2 "Conduct operational maneuvering and force positioning."

10 This example is developed more fully in Appendix E.

11 JTIMS users also have the capability to create new templates when necessary.

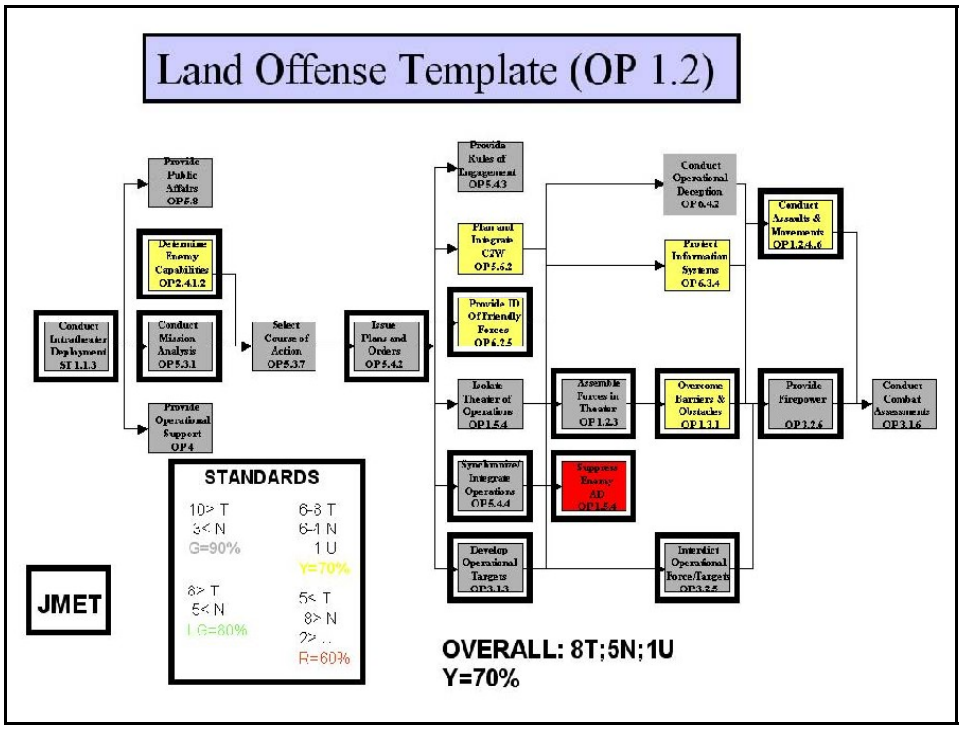

Figure X-11. JTIMS Template

The JTIMS tool will allow the planner to select and modify these templates as necessary for the specific crisis for which planning is underway. As can be seen in Figure X-12, an ESORTS/JTIMS interface would allow these templates to be viewable with the ESORTS tool.

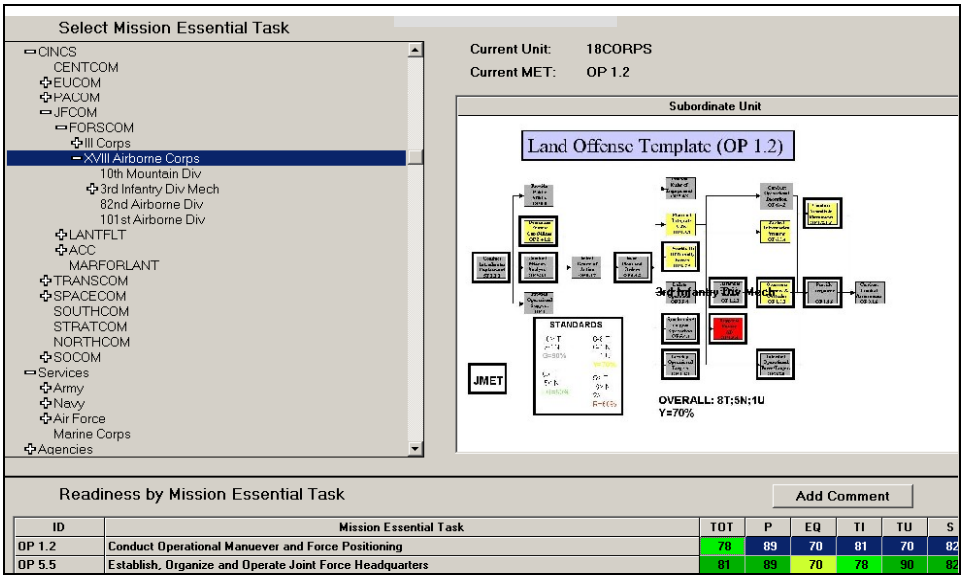

Figure X-12. ESORTS/JTIMS Interface

A similar view would be available for our example of a precision strike operation. Once the planner has decided on the exact task hierarchy, it would be input into the ESORTS software, as shown in Figure X-13.

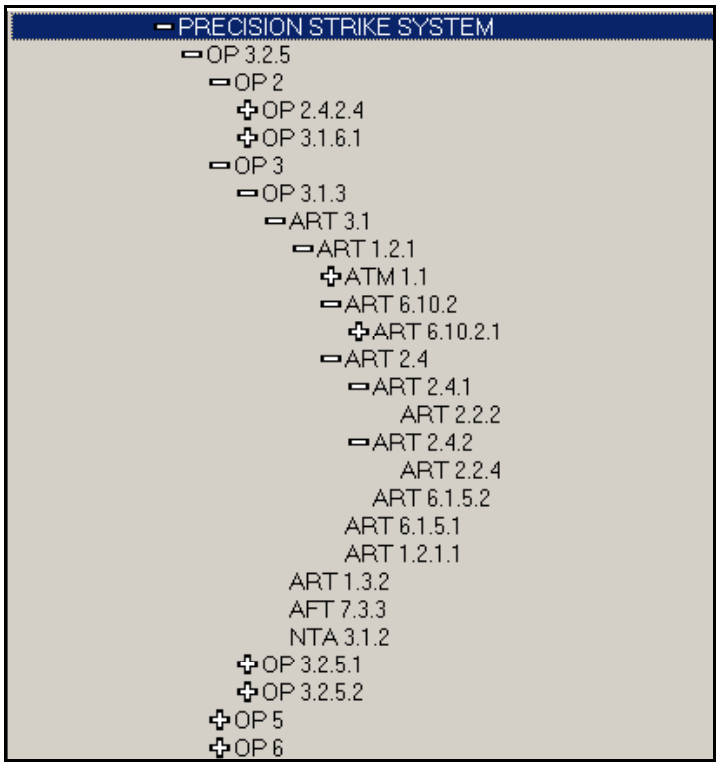

Figure X-13. The Precision Strike METL Hierarchy

The next step in the planning process, identifying candidate units for each task, becomes a fairly simple process using the ESORTS tool. In many cases, there are a large number of capabilities and organizations that could be selected to execute the precision strike mission. In actuality, not every one of these possible units is "ready" at any particular time. With the ESORTS tool, narrowing the list of potential candidates could be a computer keystroke away.

For example, given a task such as ART 2.4.1 "Conduct Lethal Direct Fire Against a Surface Target," the three brigades of the 1st Cavalry Division might be potentially available to perform this task. Conceivably, any of the three could be called upon to perform the task. However, when the crisis planner uses the ESORTS tool and selects the task to be performed (Figure X-14), he sees that only the 2nd Brigade is "ready;" the other two brigades have serious equipment or training deficiencies (as illustrated by the

arrows in Figure X-14). With this information readily available to the crisis planner, efficient decisions regarding deployment tasking can be made.

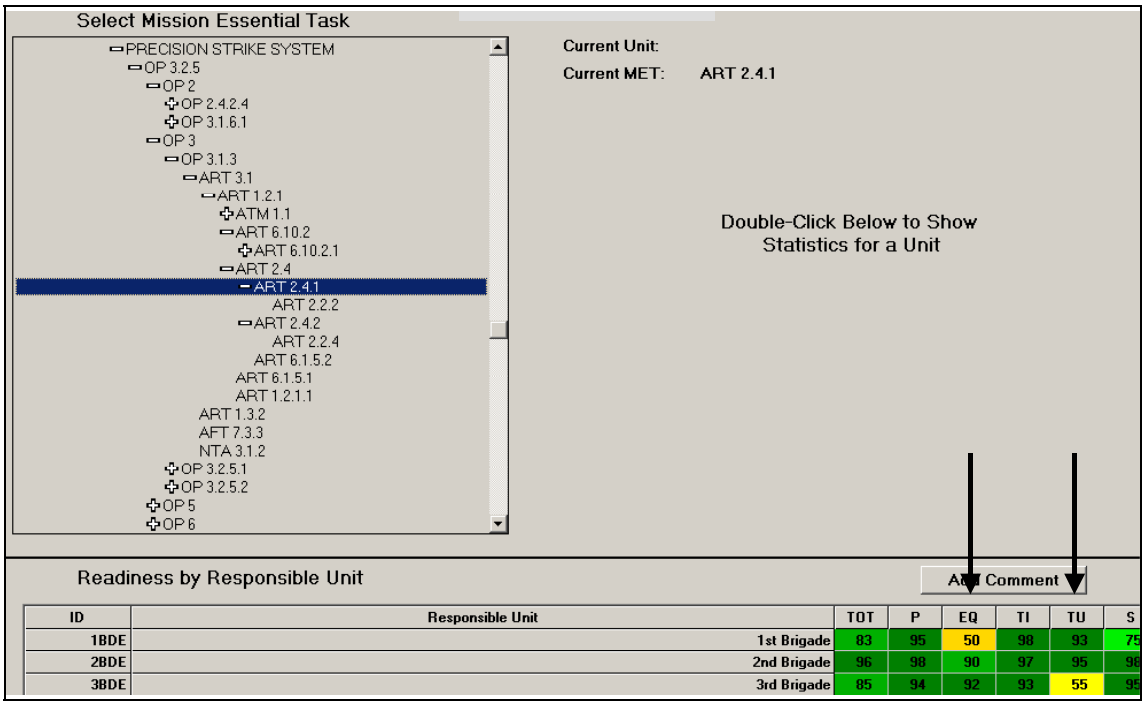

Figure X-14. Brigade Status Report

MONITORING OPERATIONS, PEACETIME AND WARTIME, WITH ESORTS AND JTIMS

The ESORTS and JTIMS tools can also serve a more general management function. Its power for the resource manager is found in the details regarding the specific categories of personnel, equipment, supplies, and individual and unit training. These resource and training factors are integral inputs to an organization's readiness level. When viewed in relation to the specific METs a unit is designed or assigned to perform, resource managers can easily identify shortfalls and take corrective action.

For example, using the ESORTS tool, an Army resource manager looking at Figure X-15 can see that the 2nd Platoon of A Company, 1st Armor Brigade is well below standard regarding the equipment the platoon requires in order to perform any of its three METs (left arrow in Figure X-15).

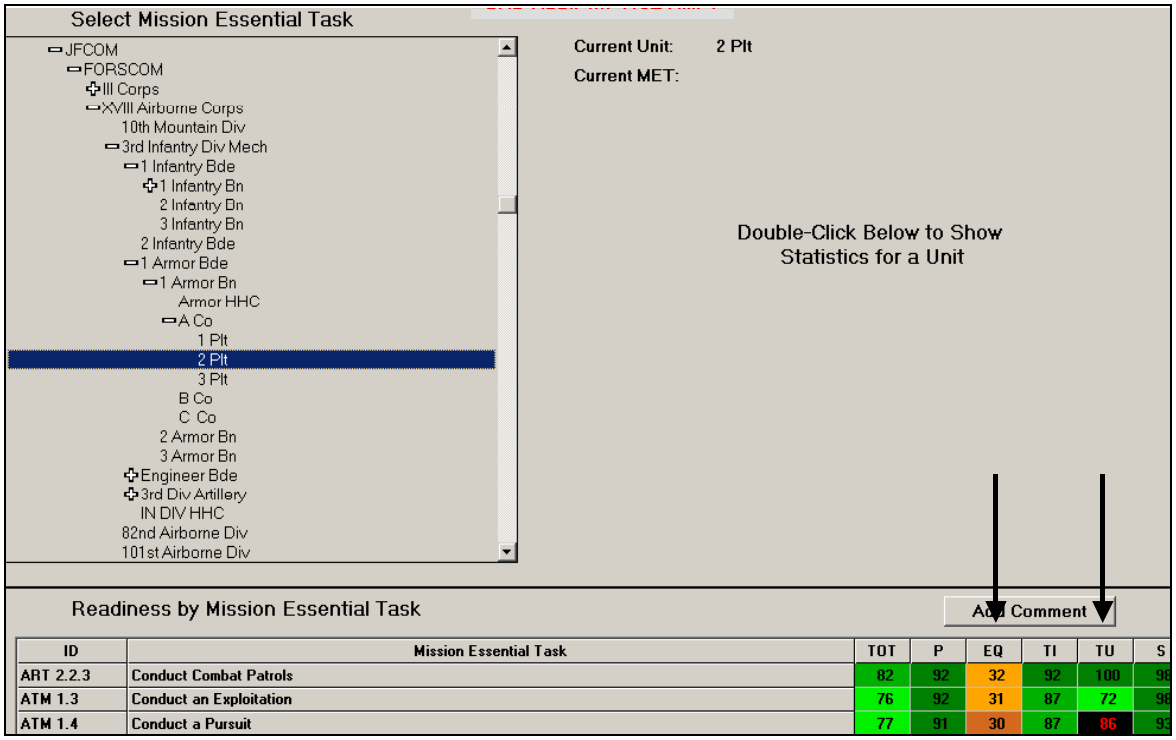

Figure X-15. 2nd Platoon Status

Figure X-16 displays the results of further investigation by the resource manager; ESORTS reveals what the specific equipment deficiencies are. Armed with this easily

accessible knowledge, made possible by the use of transactional databases to populate the ESORTS tool, the resource manager is in a good position to direct appropriate corrective action.

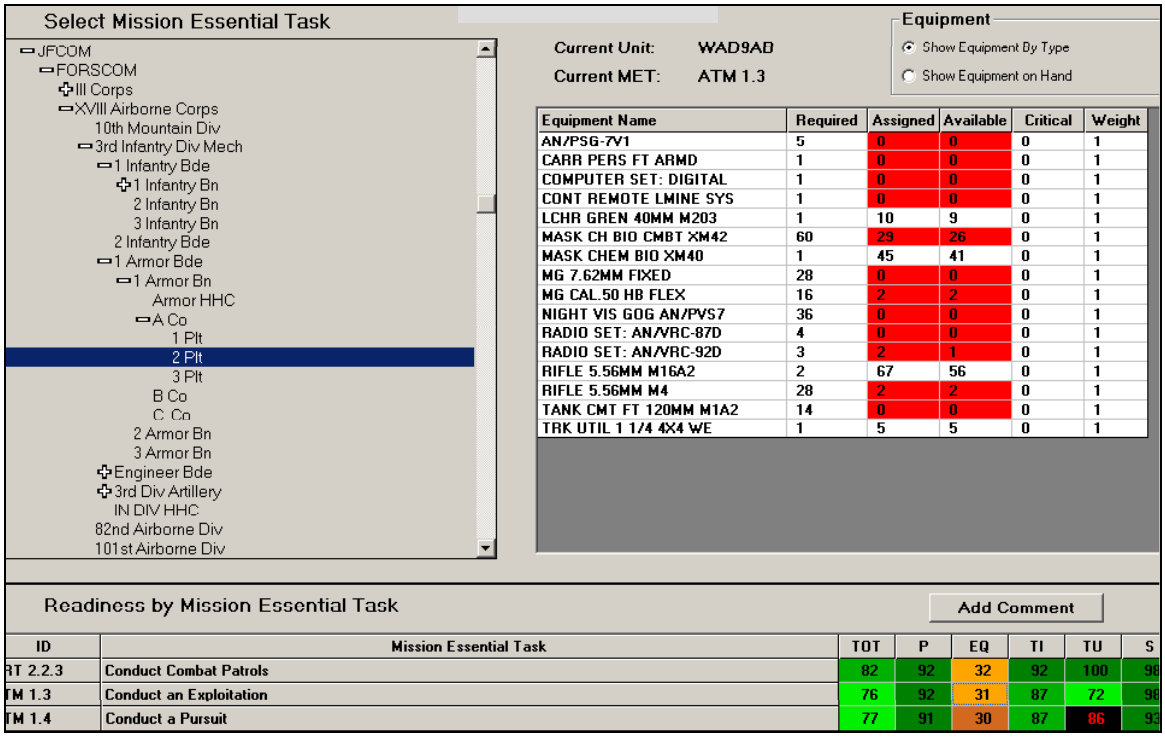

Figure X-16. Equipment deficiencies

The 2nd Platoon's status display also shows a highlighted number for "unit training" (TU) for its third MET. Although unit training is listed as 86% complete, the red number (shown with the right arrow in Figure X-17) indicates a problem. Training managers, as well as commanders at all levels of the chain of command can easily see where the deficiency lies. As shown in Figure X-18, one of the tank crews has not fully qualified on Table VIII.

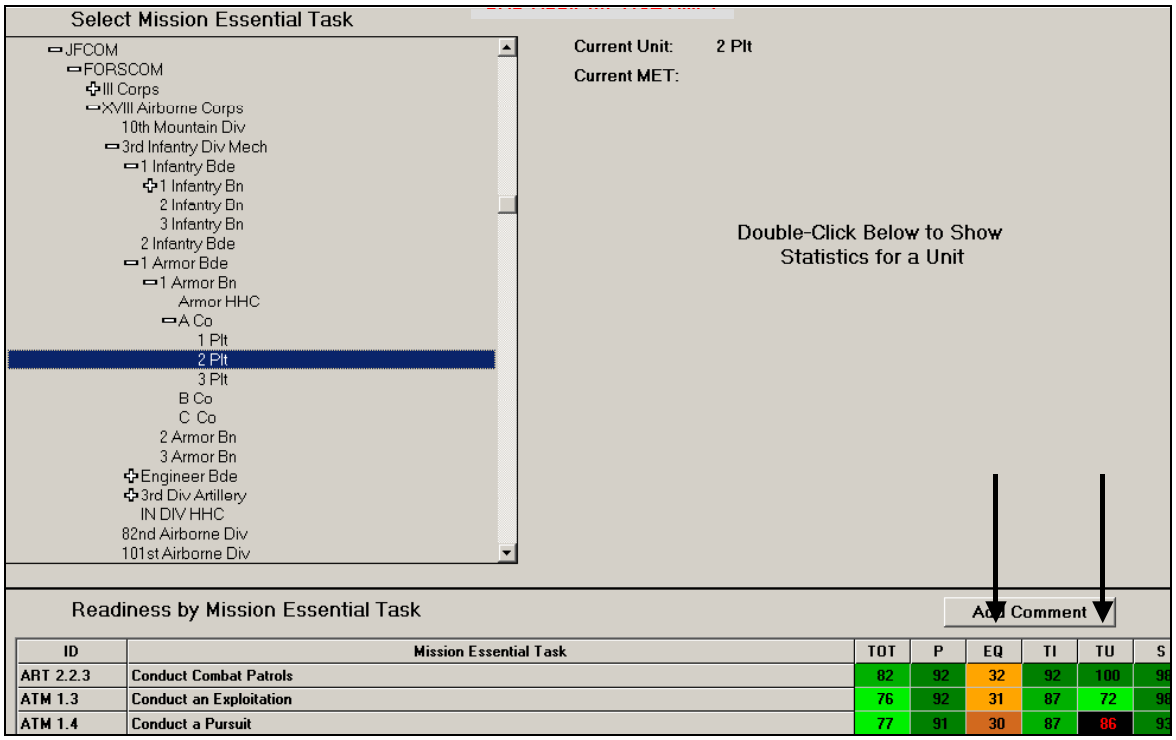

Figure X-17. Unit Training

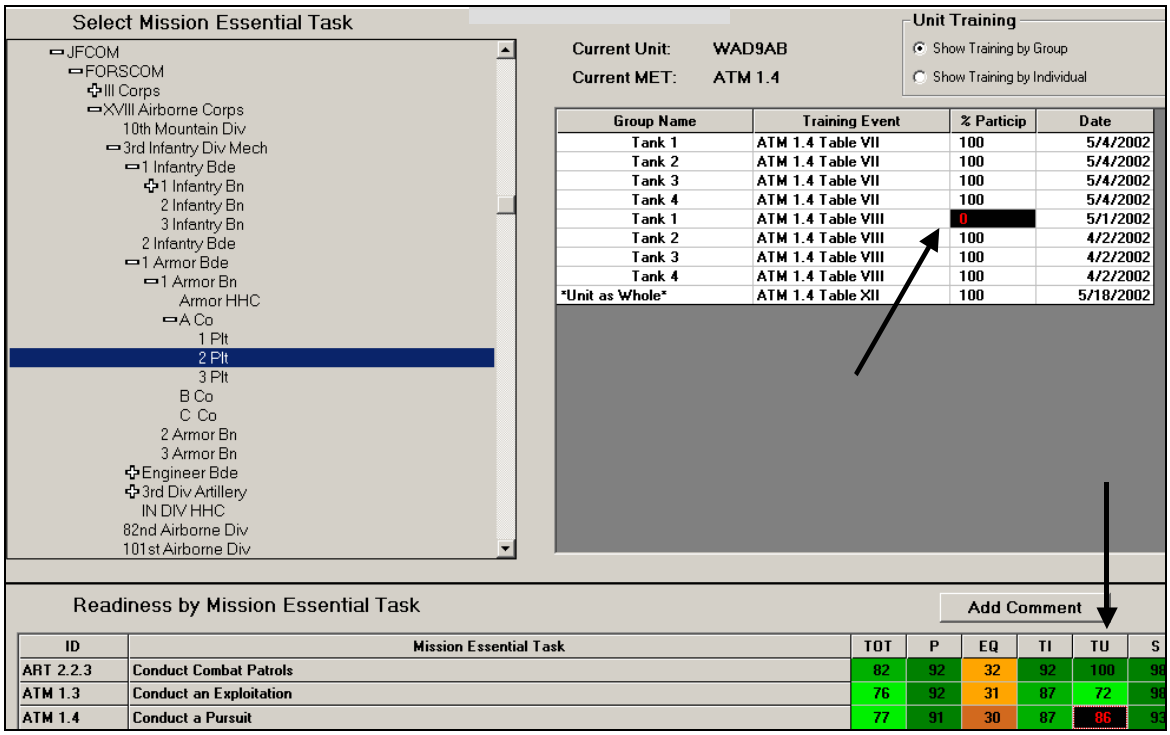

Figure X-18. Tank Training

Further investigation reveals that this is due to the untrained status of the platoon leader (Figure X-19).

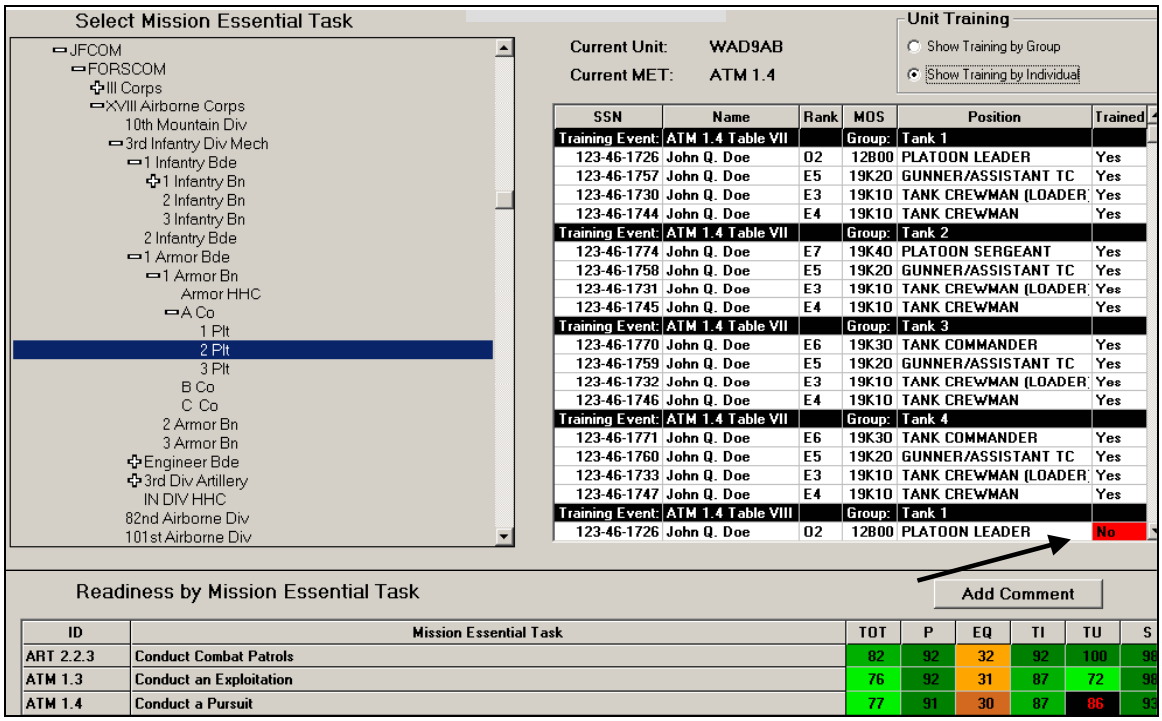

Figure X-19. Platoon leader training status

ESORTS can also be used to track the relative status of units that share "habitual relationships." Whether these are identified JTF Headquarters organizations, Army derivative UICs, or Air Force "provisional" units, the status of the organizations involved can easily be monitored using the ESORTS tool. Figures X-20 and X-21 illustrate the power of the ESORTS tool for displaying the status of a JTF HQ and an AEF (which forms the basis of a provisional AF unit) respectively.[12]

12 The "tasks" listed for I Corps reflect the military operations PACOM currently presumes would be assigned to this JTF Headquarters. Although these are not tasks in the purest sense of the term, they provide the starting point for an expanded task hierarchy similar to those detailed earlier in this chapter. For further information, see "USCINCPAC JTF HQ Joint Mission Essential Task List, Version 4," October 1, 2000.

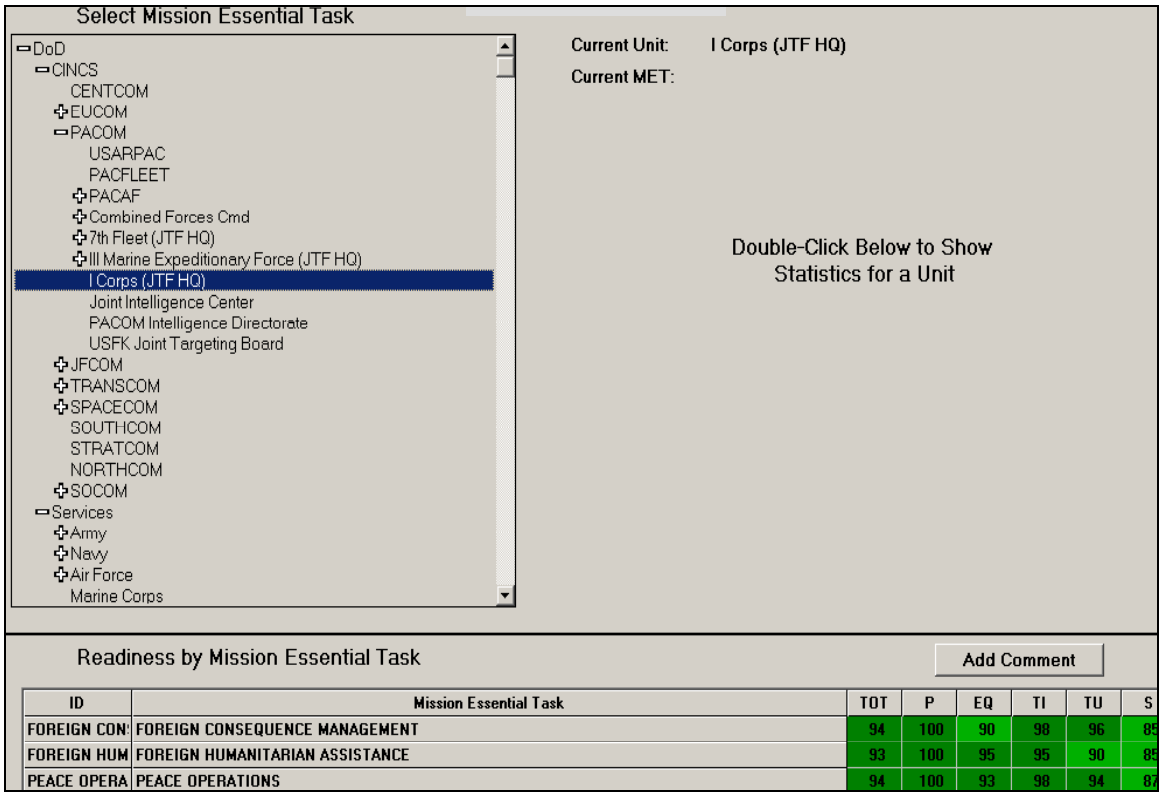

Figure X-20. JTF Headquarters

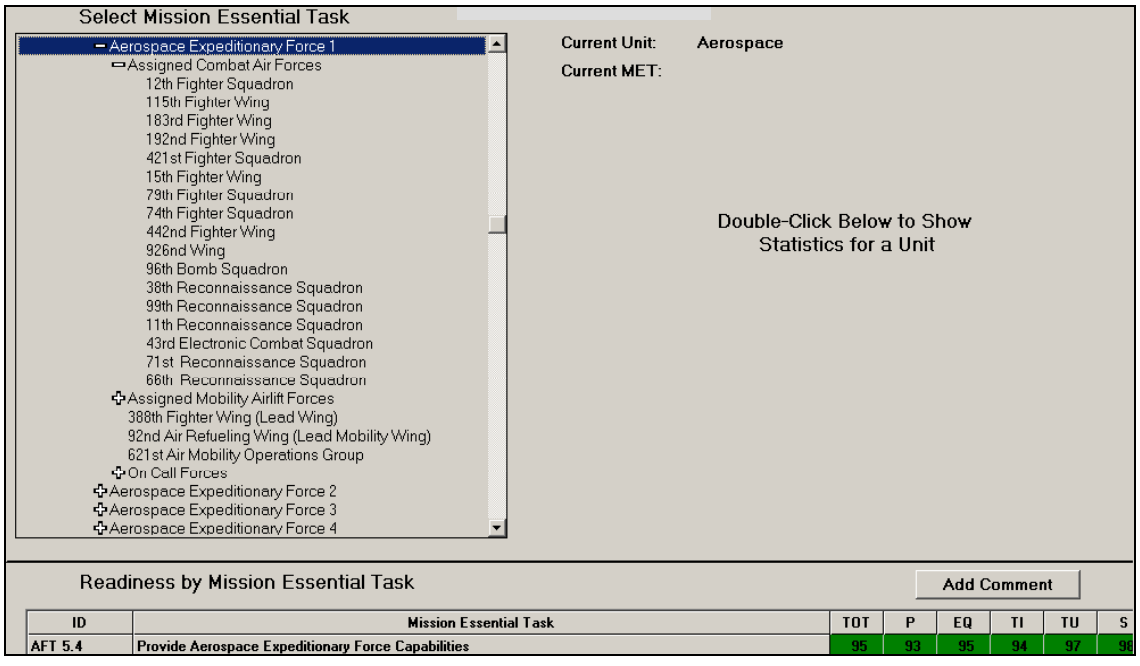

Figure X-21. AEF Organizational Listing

Because of the real-time nature of the transactional databases that feed the resource and training status numbers in the ESORTS software, the tool has the potential to provide the chain of command with up-to-date information regarding the status of all the organizations involved in an on-going operation. For example, all the ships in 7th Fleet already report their respective munitions expenditure on a daily basis into the conventional ammunition integrated management system (CAIMS). Since this database will be tied directly into the ESORTS tool, both senior commanders and the logistics community will have direct and nearly immediate access to the state of fleet munitions, and can thereby make better decisions regarding the apportionment of assets or the maintenance of munitions sustainment. As automated status reports, e.g., in future Army combat vehicles, become standard throughout the department, the ability to use ESORTS to monitor readiness in peace and war will naturally grow.

Appendix A
THE JOINT TRAINING SYSTEM

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The CJCS established the JTS in the aftermath of DESERT STORM. That war demonstrated the need for the institutionalization of a mission-to-task (requirements based) joint training system. There are three major documents that provide policy, guidance and methodologies for the JTS. They are the Joint Training Policy Instruction (CJCSI 3500.01B), the Joint Training Manual (CJCSM 3500.03), and the Universal Joint Task List (CJCSM 3500.04B).

- The Joint Training Policy (JTP) establishes basic goals and philosophy for the system. Those goals are to: prepare for war; prepare for smaller scale contingencies; prepare for multinational operations; integrate the interagency process; facilitate the joint vision. The end state of the system is to enhance joint readiness. The main tenet of the system is to train the way we intend to operate, i.e., jointly.
- The Joint Training Manual (JTM) establishes the procedures and methodologies of the system. Basically those procedures and methodologies outline a closed loop, four-phased system.
    - In the requirements phase, joint commanders take the requirements established in the key strategy documents - such as the Defense Planning Guidance (DPG), Contingency Planning Guidance (CPG), and the Joint Strategic Capabilities Plan (JSCP)—and translate them into missions, operations, and tasks. "A mission is an assignment with a purpose and consists of operations. An operation is a military action that supports a mission and consists of tasks. A task is a discrete event based upon doctrine, tactics techniques and procedures, and an organization's SOP that is executed to accomplish operations."[1] The output of this phase is the establishment of the Joint Mission Essential Task List (JMETL). An essential task is defined as "one where the mission has a high probability of failure if it is not accomplished successfully."[2] Thus, the first phase of the JTS establishes a set of mission essential tasks (METs) based on the DPG, CPG, and JSCP. This is precisely what the new readiness system, the DoD Readiness Reporting System (DRRS), also requires organizations

1 CJCSM 3500.04C, *The Universal Joint Task List (UJTL),* 1 Jul 02, p. A-7.

2 Ibid. p. A-5.

to do. It is noteworthy that the JTS, with this requirements focus, has been in place for over ten years; and has been used by the same military organizations, to varying degrees, that would be reporting readiness.

- In the plans phase, combatant commanders and their staffs formulate their Joint Training Plans (JTPs) and develop training events and exercises based on the need to be able to perform the JMETs identified in the previous phase. Although they are not explicitly tied to OPLANs, as the DRRS requires, JMETs are already included in the combatant commander JTPs. Training events and exercises focus on meeting the training standards identified for each JMET and on correcting deficiencies noted in phase four; specific training objectives for those events and exercises are based on previous performance assessments. Planning for these are also based on guidance found in the Joint Training Master Plan (JTMP). Much of this planning is done at JFCOM sponsored planning conferences. The CJCS Exercise Program (CEP) is the central feature of this phase. It consists of CJCS sponsored exercises and combatant commander sponsored events. These events and exercises vary from seminar type, computer assisted staff training, such as UNITED ENDEAVOR, to large exercises such as JTFEX and ROVING SANDS with a combination of live, virtual and constructive simulations and events. Besides the JTPs, event schedules - which include identification of training audiences, ranges, control mechanisms, observation plans and other resources, deconflicted by the Joint Training Information Management System (JTIMS)—are outputs of this phase.
- In the third phase, the planned exercises and events of the previous phase are executed. Evaluations and assessments of the extent to which the training standards are met, are either external, evaluated by the Joint Staff or JFCOM, or internal, evaluated by the combatant commander staffs. The results of these events are recorded in Joint Universal Lessons Learned, and CJCS Commended Training Issues (CCTIs). It is in this execution phase that the CJCS objectives, goals, and intent of producing joint and interoperable forces are addressed.
- In the fourth phase, observations from the previous phase are analyzed and assessments made as to whether units or staffs are either fully trained (T), need practice (P), or are untrained (U) on their JMETs. Deficiencies are addressed as part of the Joint Monthly Readiness Review (JMRR) and the Joint Warfare Capabilities Assessment (JWCA), noted in readiness reports, and brought to the attention of the Senior Readiness Oversight Council (SROC). Remedies for those deficiencies are identified in the combatant commander Integrated Priority Lists (IPLs) if they are programmatic, and noted for future training exercises and events.

- The UJTL is a key element of the JTS.[3] It provides, as mentioned above, the common language of the JTS. But, as directed by the CJCS, it also is the language of the operational commanders and planners. The UJTL includes a menu of measures of performance and criteria (which together form training standards) associated with each task.[4] The tasks range from wartime tasks to those that would be executed in operations other than war. The tasks are also hierarchal—from those that would be accomplished at the national strategic level, to those at the tactical level (although the UJTL lists several interoperability tasks at the tactical level, the majority of tactical-level tasks are found in task lists published separately by each of the military departments). Thus the UJTL, as a critical part of the JTS, is also linked to real world operational planning and execution, which the DRRS must be able to assess and report on.

Not with standing the obvious importance of the JTS, it seems possible that, in the natural course of events, the JTS, which provided important precedents for DRRS, will be incorporated into the larger DoD approach to readiness. Just as there is an Undersecretary of Defense for Readiness and Personnel and a Deputy Undersecretary of Defense for Readiness and Training, it seems likely that the Joint Training System and the full range of training issues will be recognized as an important contributor to DoD readiness. In this context, it is important to remember the quote from the Defense Guidance, "Readiness remains the Department's top priority and it must be measured in the context of the new strategy. New metrics must account for actual readiness to perform missions assigned under the new strategy."[5] We expect that the JTS will make important contributions to the new DoD approach to readiness.

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3 See Chapter VIII for a discussion of recommended changes to the UJTL and the service tactical task lists.

4 See Chapter IX for a discussion of how the standards currently in the UJTL are appropriate for training but are inadequate as standards for reporting readiness.

5 DPG P 04-09, May 02, p. 15.

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Appendix B
TRANSITIONING TO A “MET” TAXONOMY

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TRANSITIONING TO A "MET" TAXONOMY

Institutionalizing a common taxonomy will bring increased clarity to many DoD processes. This has been done in the training arena; it seems reasonable that it also be done in readiness reporting, planning, programming, budgeting, etc. It does not require a great deal of effort for the services and the Joint Staff to transition to a common taxonomy having 'mission essential task' as its basis. The discussion below uses unit-level examples to illustrate how this can be done.

Army

The Army long ago institutionalized the MET taxonomy; therefore, no changes are necessary.

Air Force

The 463d Airlift Control Squadron's DOC statement contains the following mission description:

> 'Deploy trained and equipped personnel and serviceable equipment as the deployed command and control C2 element of AMC's Tanker Airlift Control Element (TALCE), to establish, augment, or sustain command, control, and mission support for strategic and theater mobility forces supporting global reach laydown for war, contingency, operations or AMC-directed missions. Plan, coordinate, and conduct onload, offload, en route mission support, and air refueling coordination for tasked operating locations. Provide and maintain secure and non-secure communications in support of TALCE C2. Deploy mission support forces to specified locations as tasked by HQ AMC TACC and/or (if deployed) the Air Mobility Element (AME) managing TALCEs deployed within their area of responsibility (AOR). Provide air mobility liaison to US Army units specified in the AMC/ACC/FORSCOM/TADOC Memorandum of Agreement."[1]

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1 HQ AMC (DOOR) message 092199Z Apr 97 "SORTS 463 ALCS DOC Statement."

The above mission description was developed from the Air Force Task List (AFDD 1-1) per Air Force directives. Therefore, this mission narrative is quite obviously a list of tasks assigned to the squadron that are essential for the accomplishment of a military operation. Breaking down the narrative into its component parts results in the following task list:

- Deploy trained and equipped personnel and serviceable equipment as the deployed command and control C2 element of AMC's Tanker Airlift Control Element (TALCE) to establish, augment, or sustain command, control, and mission support for strategic and theater mobility forces;
- Plan, coordinate, and conduct onload, offload, en route mission support, and air refueling coordination for tasked operating locations;
- Provide and maintain secure and non-secure communications;
- Provide air mobility liaison to US Army units.

As is apparent from this illustrative example, the mission narrative portion of an Air Force squadron's DOC statement is in essence already a mission-essential task list (METL). The same is true for the MISCAP of a UTC. The MISCAP reflects the task or tasks drawn from the parent unit's DOC statement and assigned top a particular UTC, making the MISCAP a METL at the UTC-level.

Navy

A primary mission area, PRMAR, is a particular mission area that a unit must be fully capable of performing to carry out the wartime mission for which the unit is organized and designed. NTTP 1-03.3 (Rev. A) states: "Unit status is an assessment of a unit's ability to perform specific tasks of war, known as naval warfare mission areas, under certain conditions."[2] Combining these two statements results in a different wording for a PRMAR, but the same meaning—specific tasks that a unit must be fully capable of performing to carry out the wartime mission. The specific tasks that are contained in the list are currently termed "operational capabilities" by the Navy. However, the term "capabilities" in this case is synonymous with "task." For example, the Navy says that a unit with an assigned PRMAR of 'antisubmarine warfare' might have ASW 9—Engage Submarines with Anti-submarine Armaments—as an operational

2 NTTP 1-03.3 (REV. A), *Status of Resources and Training System Joint Report – Navy (SORTSREPNV)* p. 4-3.

capability.[3] The phrase "engage submarines" is a task—something to be done. Since a PRMAR is a compilation of operational capabilities (tasks), a PRMAR is, in other words, a METL. The same is true of a ROC/POE statement. Since a ROC/POE statement is a "composite listing of all required operational capabilities" and "operational capabilities" in the Navy lexicon are synonymous with "task"—a ROC/POE statement is in actuality a METL.

Marine Corps

Every unit has a comprehensive set of generic tasks it is designed to accomplish. These tasks are described in the unit's Mission Performance Standards (MPSs). METLs are normally a subset of a unit's MPS. The MPSs are listed in the Training and Readiness Manual (T&R) for each type and size of unit. The T&R manuals also describe the training events a unit must undergo in order to be considered trained in its specific tasks.

Joint Mission Area

A JMA is a "functional group of joint tasks and activities that share a common purpose and facilitate joint force operations and interoperability."[4] Quite simply, one way of looking at a JMA is as an aggregation of a combatant commander's METs grouped by function; in other words, a functional JMETL. For example, according to Joint Forces Command, the Joint Mission Area of Air and Missile Defense (Air and Missile Defense JMETL) is made up of the following tasks: 2.1 Disseminate Tactical Warning; 3.1 Joint Fires; 3.3 Joint Suppression of Enemy Air Defenses; 3.4 Joint Interdiction Operations; 3.6 Joint Air and Missile Defense Operations; 3.9 Employ Tactical Information Operations.

Another way to look at JMAs is that they themselves are METs. Examples from the list of JMAs currently in use includes: Deployment/Redeployment; Employ Fires; Command and Control; Force Protection.[5] Since a combatant commander will be called upon to perform one or more of these tasks in the course of fulfilling a mission assigned by the President or Secretary of Defense, it is logical to think of the full list of JMAs as a portion of the METL at the combatant command level.

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3 Ibid. p. 4-2.

4 Based on CJCS memo dated 6 Sept 2000, CM-1014-00.

5 Information Paper, J-8 DMAD, 26 April 2002. The phrase "As Is" is used by the Joint Staff to describe mission areas for "today's" military. Another list of titles, "To Be" JMAs, has been developed that contain the same basic ideas but are intended for the "future" force.

Joint Warfighting Capability

The JWCs listed in the DPG include the following major categories:

- Countering Critical Asymmetric Threats
- Strike
- Command, Control, Communications (C3) and Collection
- Intelligence
- Space
- Information Operations
- Special Operations
- Moving and Sustaining the Force
- Training and Training Infrastructure.

These categories are not identical to the JMAs being advanced by the Joint Staff, but there are quite similar both in name and in content. Like a JMA, each category is itself an overarching task, and implies certain additional tasks to be accomplished. For example, the JWC (overarching task) of 'Countering Critical Asymmetric Threats' includes four specific tasks: defense of the homeland; combating terrorism; active defense against missile threats; and passive defense against chemical and biological attacks. One could indeed call each JWC a METL at the Department level (or in some cases, at the combatant command level).

Joint Core Competencies (JCC)

The taxonomy of joint core competencies has not been formalized within the DoD. Seven JCCs have been proposed: 1) Joint Strategic Mobility; 2) Global Force Application; 3) Force and Homeland Protection; 4) Networked C4ISR; 5) Joint Logistics; 6) Interagency and Multinational Interoperability; 7) Space exploitation. Associated with each JCC are one or more operational concepts, functional concepts, enabling concepts, and Service concepts. JCCs appear to parallel to a large degree JMAs and JWCs and can therefore also be thought of as METLs at the combatant command level.

JMET/JMETL

The terms "JMET" and "JMETL" are used throughout the above discussion. Since the JMET/ JMETL is simply a MET/ METL developed by a combatant commander (i.e. the "joint" level), unless there is a distinct need to differentiate between METs and METLs developed by the various levels of the chain of command, the "J" prefix should be discarded.[6]

6 If, on the other hand differentiation is deemed necessary, than the same convention should be carried on throughout—for example, a unified command's components would have CMETLs, a fleet an FMETL, an Army division a DMETL, an Air Force squadron an SMETL, the Navy an NMETL, etc.

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Appendix C
A PRELIMINARY CONCEPT OF ESORTS

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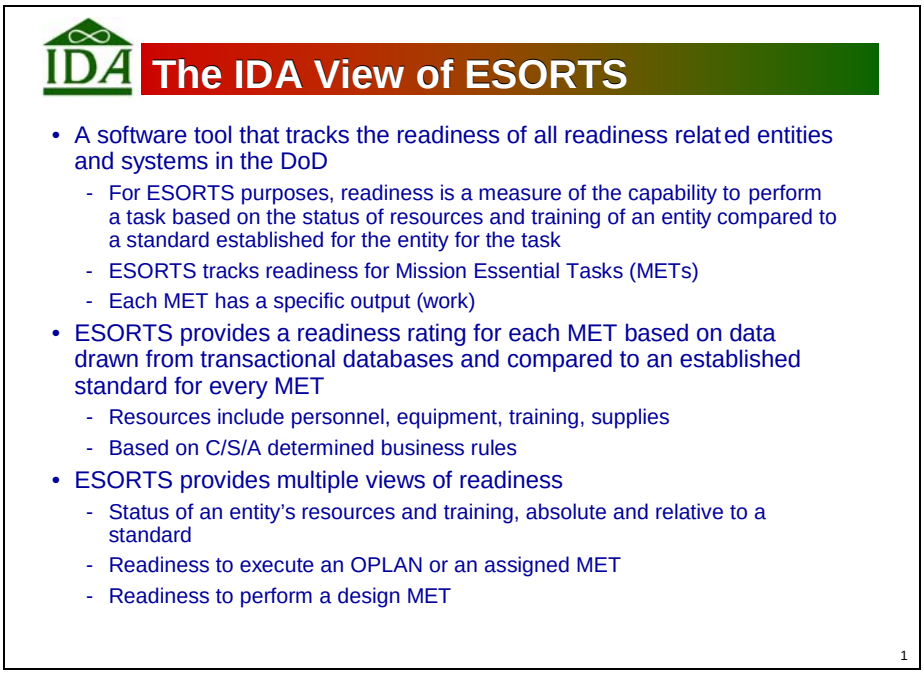
A PRELIMINARY CONCEPT OF ESORTS

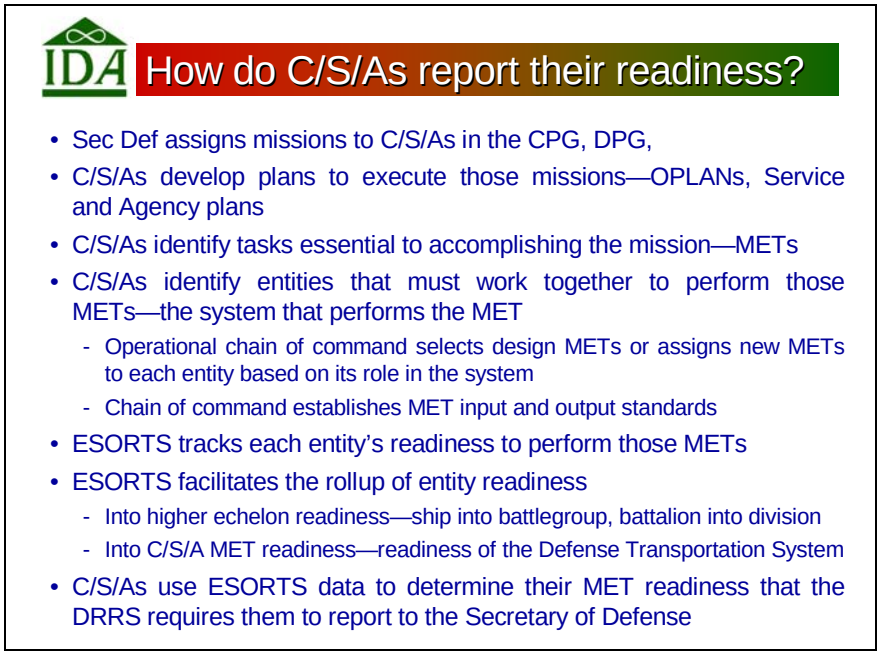
As part of our research effort we developed an ESORTS prototype that was intended to assist us in a "proof of concept" effort. Our programmer for this effort was a summer intern and we built the prototype using off the shelf, commercial software. All of our research efforts on ESORTS used this prototype. We believe that our prototype helps to demonstrate that the concept of ESORTS, as described in this appendix and referenced throughout the paper, is valid. Although the department may make quite different decisions about the nature of ESORTS, we feel that this appendix is of value simply as a demonstration of the viability of one approach to an ESORTS design.

ESORTS has the potential to provide three views of readiness that will be of value to different users across the DoD. Since ESORTS is based on transaction data it will include specific details on every uniformed person, every major piece of equipment and many minor pieces, all categories of supplies, including ammunition. Most of these data are available now. They will become more easily available as the DoD components make transaction data available on the Internet and Siprnet. The one area of data that is currently lacking is in the training area. Although joint training data is to be collected in JTIMS and some services, especially the Navy, maintain training databases, the USD P&R has yet to require all DoD components to maintain training databases adequate to meet ESORTS needs. Ultimately training databases will likely have to be established by all the DoD components for all of their measured units if the concept of an automated ESORTS, as called for in DoDD 7730.65, is to be implemented. In the absence of automated training databases, it is likely that unit commanders and entity heads at all levels will be required to render periodic reports on their training status directly into ESORTS.



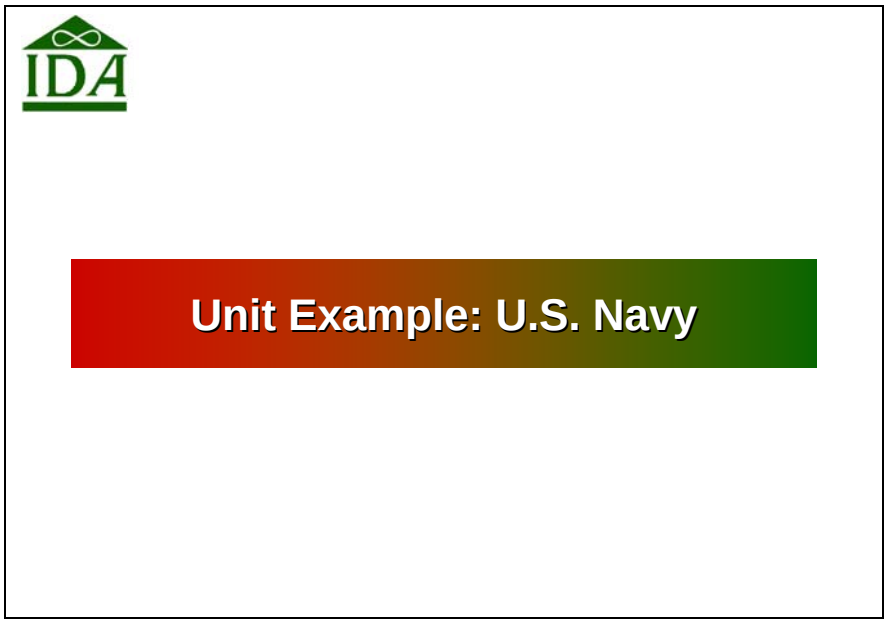
There are two types of METs that should be included in ESORTS. They are design METs and assigned METS.

It appears most likely that the operational chain of command will rely on the METs a unit is designed to accomplish. These design METs are established by the service in the design of the units. The services already know what these design METs are. They are contained in Army Mission Training Plans, in Navy ROC/POEs, in Air Force MISCAPS for each UTC, and in similar Marine documents. The most logical way to start ESORTS is for the services to incorporate these design tasks into ESORTS. In the vast majority of those cases where the design task is inadequate to meet the needs of the operational commander, the operational commander will want to change the condition or standard for an existing design task. In other words, the design METs should serve as the basis for ESORTS.

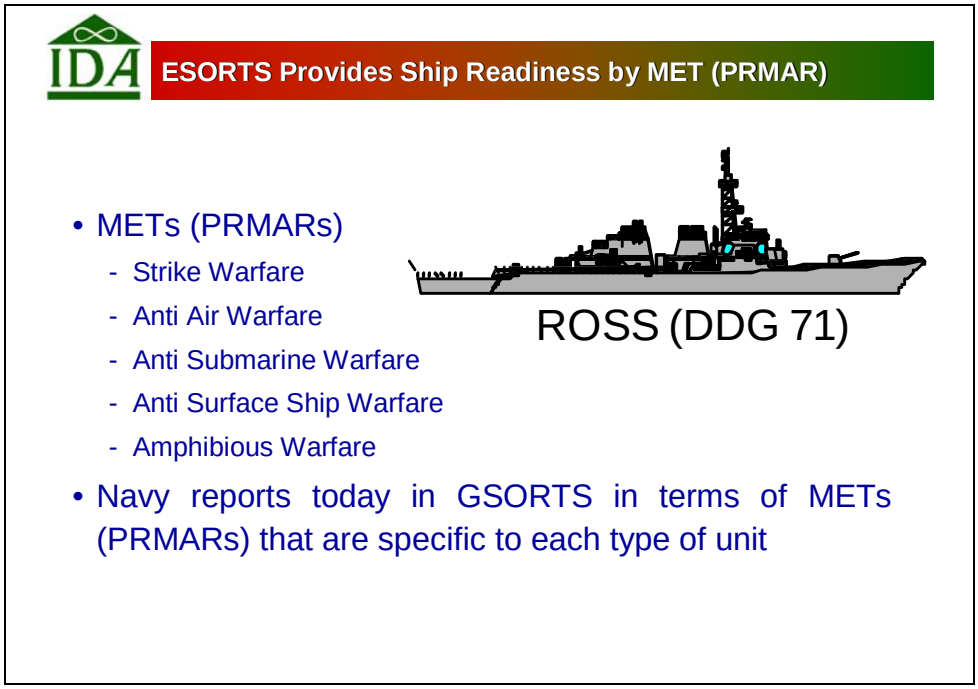


This is a summary of the IDA view of the readiness reporting process. Note the 4th bullet where the operational chain of command selects METs that are of concern to its ability to perform its assigned missions. These METs may be ones the unit is designed to accomplish or they may be different. Even if they are the same as design METs, the COCOM may have a different output in mind.

We use a straightforward example of a basic Navy unit, a ship, which is part of a larger combat organization, a battlegroup.



The navy uses specific business rules as the basis for reporting PRMAR readiness in GSORTS. These rules may be adapted for use in ESORTS. Each service has well-established business rules for SORTS reporting that can be adapted to ESORTS. That is very important, since it means that DoD does not have to develop an entirely new culture to create the new DRRS. We simply need to adapt the processes that the services have developed over the past half-century to a broader and more comprehensive reporting system.



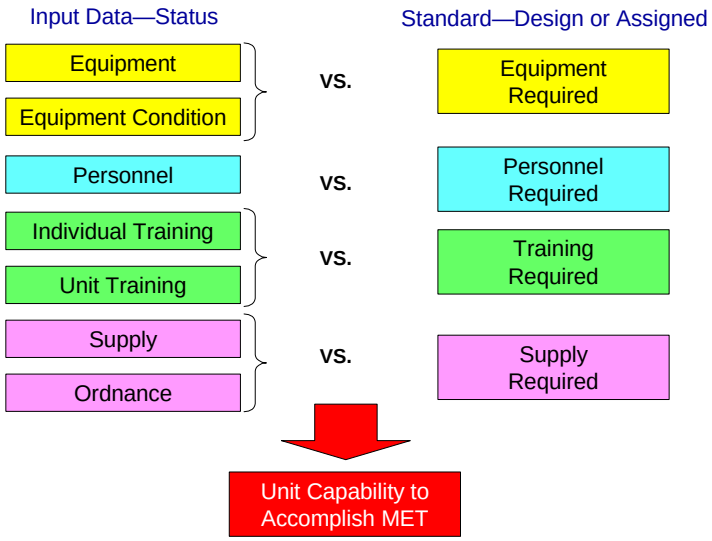
Note here that an operational commander may use the design METs as a basis for determining what the assigned METs should be based on his assigned mission.

Design METs vs. Assigned METs

- Design METs are generic, Assigned METs are specific
  - Design METs are determined in the unit design process based on generic conditions and standards
  - Assigned METs are determined in the mission planning process based on mission specific conditions and standards
- Strike Warfare
  - Design MET – Launch 24 Tomahawk missiles within one hour
  - Assigned MET– Launch 10 Tomahawk missiles from assigned launch basket within 8 hours
- Anti Air Warfare
  - Design MET-- Simultaneously track 256 aircraft and/or missiles and simultaneously engage up to 12 air targets with missiles
  - Assigned MET – Detect and simultaneously track up to 36 aircraft and/or missiles. Engage no more than four targets simultaneously, as assigned by the AAW commander

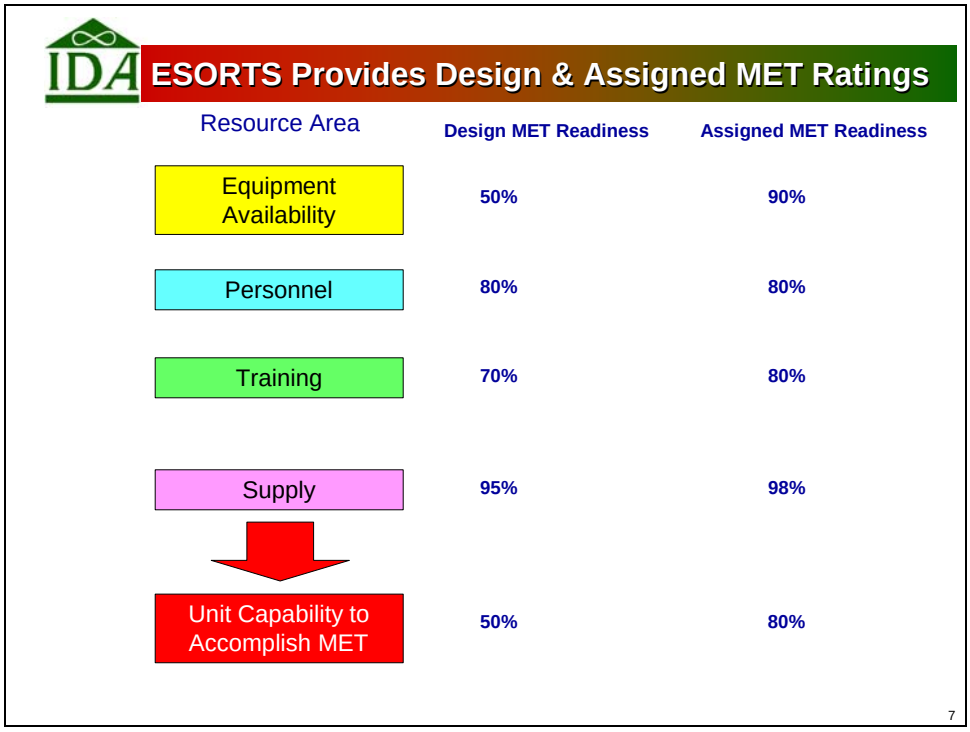
ESORTS allows unit readiness to be based on the full spectrum of resources and training that are generally considered important to determining a unit's ability to perform its METs.

ESORTS Compares Status To Standard



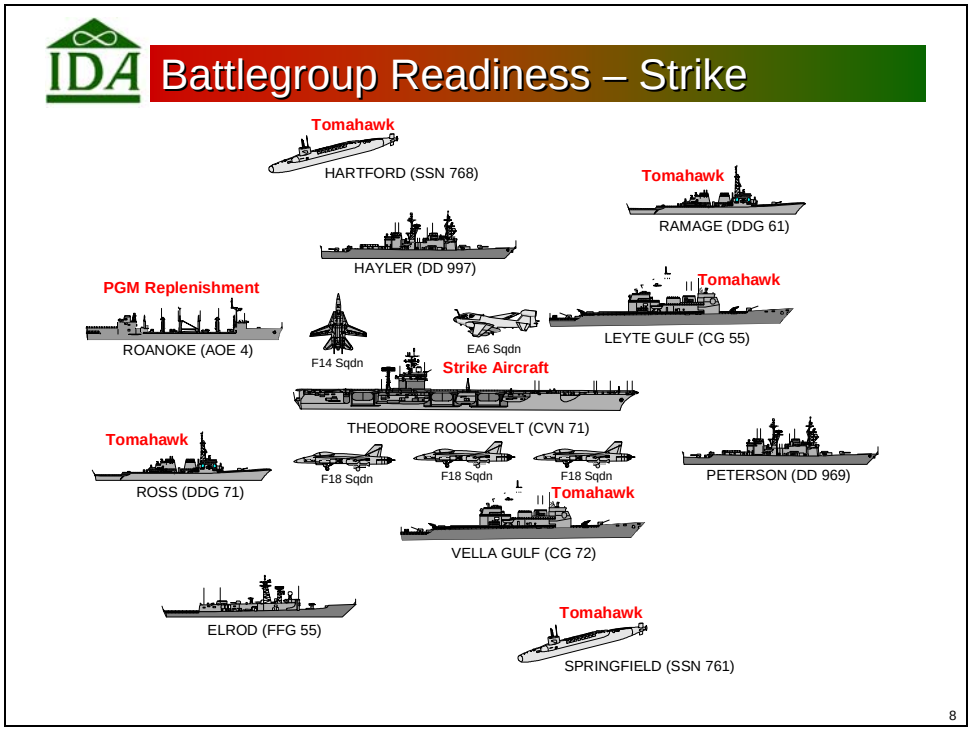
This slide demonstrates clearly the importance of the business rules in describing the readiness of a unit or organization to perform any MET. In our hypothetical example and using the Navy's worst-case GSORTS business rules, the Ross would be reported M-3 or 50% capable of performing the Strike MET.

With the business rules more closely aligned to assigned METs, the Ross might be reported as 80% ready. In other words the design rules, conditions, and standards may be more restrictive than the actual operational requirements. In this case the operational commander would want to adjust the output standards for the strike MET to reflect the needs of the specific mission. ESORTS can be designed to provide this capability.



The battle group itself has a capability to conduct strike warfare, and it does so under the direction of the strike warfare commander, a subordinate of the battle group commander.

The battle group's strike capability, its output, is an aggregation of the strike capability of several different types of ships and aircraft. It includes the capability of the EA-6B aircraft to suppress enemy air defenses, the capability of strike aircraft to deliver ordnance, the capability of submarines, cruisers, and destroyers to launch Tomahawk missiles, and the capability of an ammunition ship to replenish the carrier with ordnance for the strike aircraft.



What is aggregated and how it is aggregated determines whether or not military leaders can obtain a clear picture of actual readiness in a real world situation.

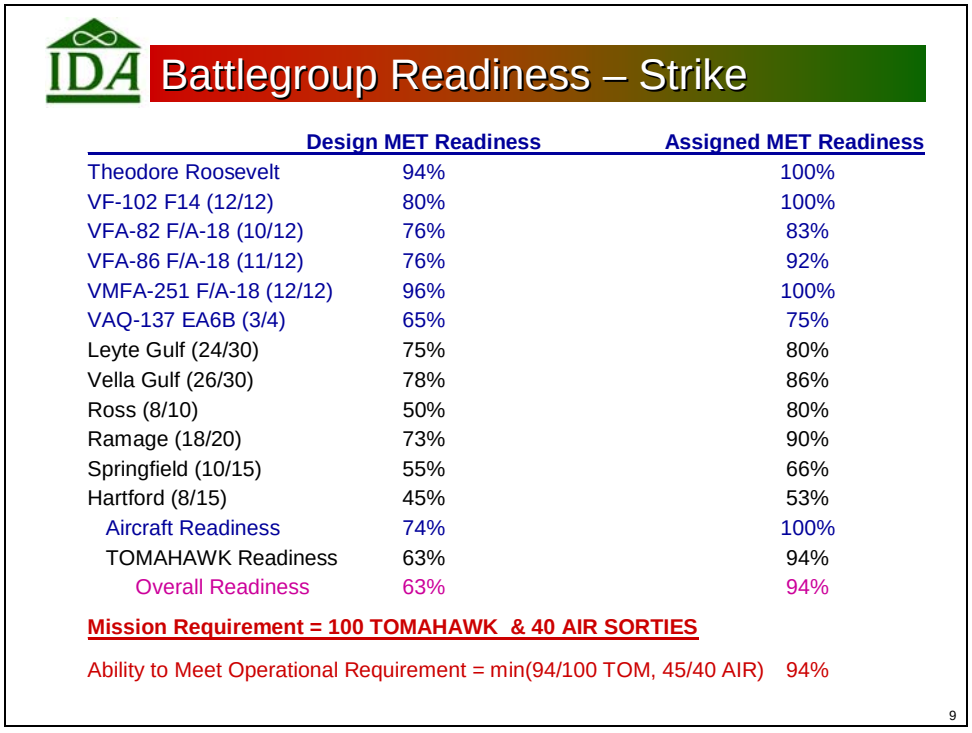
We have used a variety of plausible but restrictive business rules similar to those the Navy uses in GSORTS to depict overall aircraft readiness to perform the strike MET, overall Tomahawk readiness to perform the strike MET, and the overall readiness of the battle group to perform its strike MET (68%). The ratings and percentages reflect the

tendency in the current reporting system to describe the required capability in the broadest sense and to describe the existing capability using a worst-case analysis.

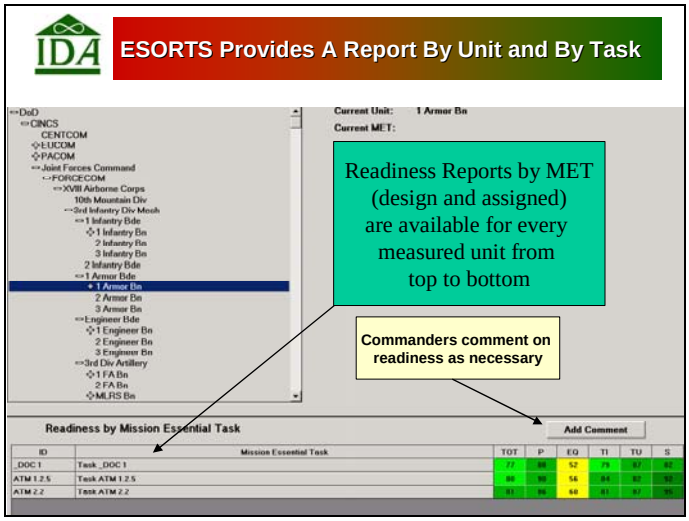
When one looks at an operational requirement, i.e., the job the combatant commander wants done, readiness may be substantially better or worse than reported. In our hypothetical case, the combatant commander wants strikes delivered against 100 Tomahawk targets and 40 aircraft targets. The battle group is 94% prepared to do that. That is a considerably higher level of readiness than that calculated using the very plausible business rules employed in this example. If aircraft strike sorties can be used to replace Tomahawk launches, the battlegroup might be considered even more ready.

The example demonstrates:

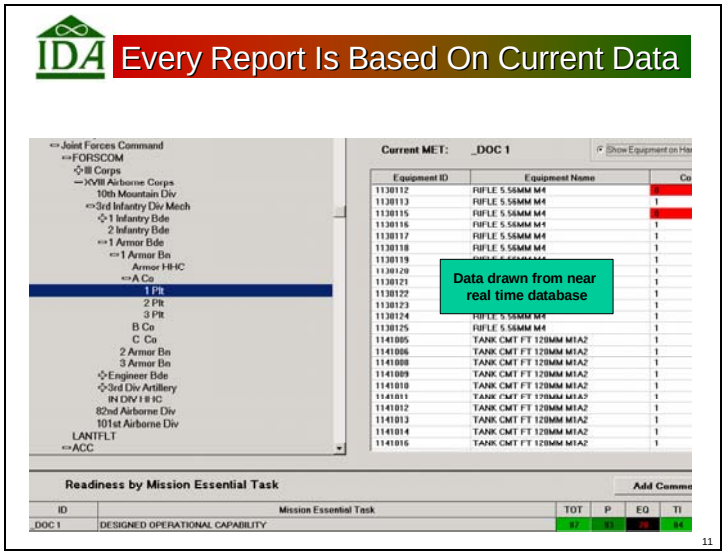
- the importance of the business rules for both individual units and in aggregation
- the importance of relating the business rules to specific METs, and
- the importance of having raw data available to be combined in a variety of ways as the scenarios and operational requirements change. (The mission essential task (MET) may stay the same, but the relevant conditions and output standards may change readiness requirements significantly.)



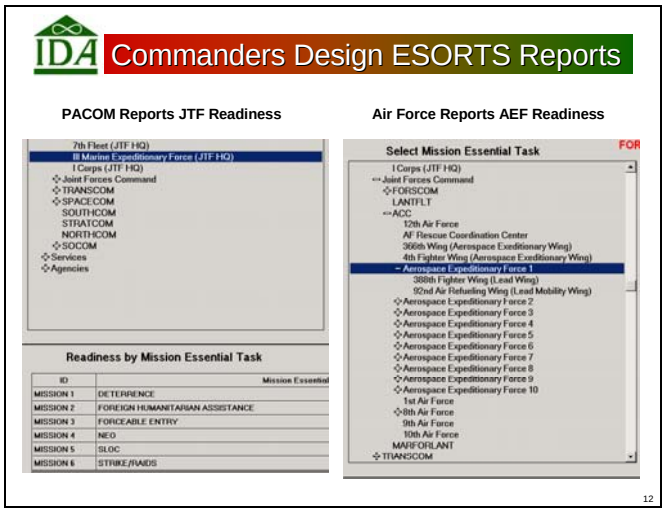
This is a screen shot from our ESORTS prototype. Note that the unit view shows the hierarchy from top to bottom. The bottom of the screen shows the readiness for each of the unit's design and assigned METs. We used the term DOC to describe the unit's basic TO&E requirement. We believe the department can design ESORTS to provide this kind of information. Note also that the commander has the opportunity to submit a comment regarding each of his METs.



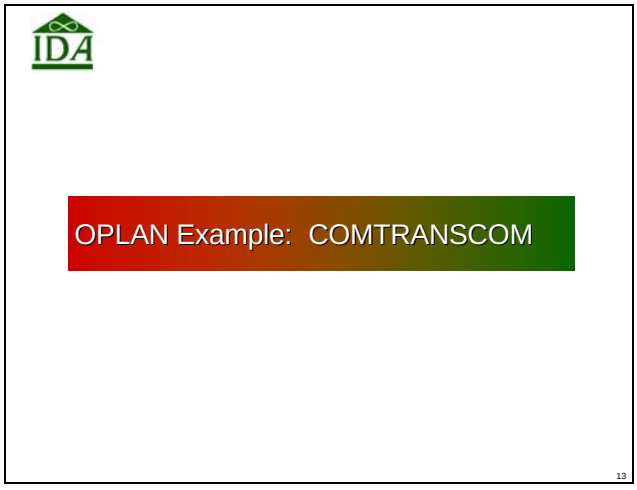
ESORTS is based on detailed personnel, equipment, training, and supply data, e.g., personnel by name, equipment by serial #, etc. Data of this kind is already available DoD-wide in the Joint Total Asset Visibility (JTAV) database and will be increasingly available as DoD data systems are modernized.



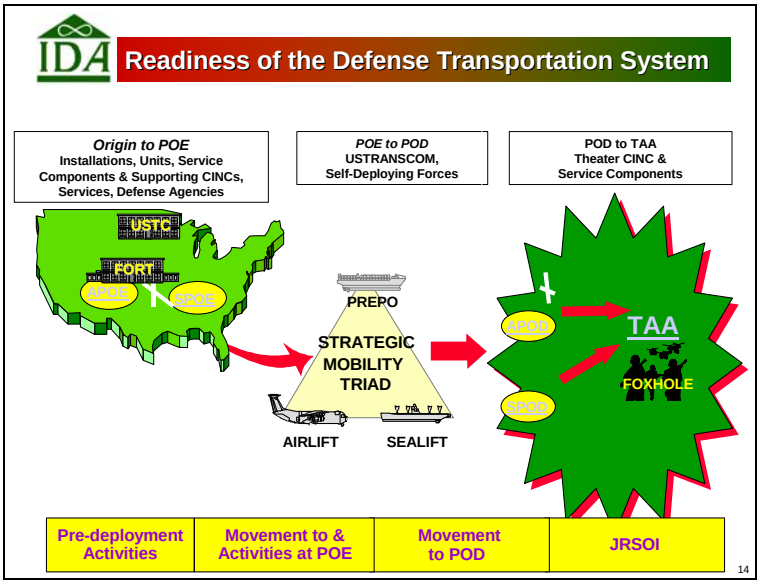
ESORTS allows commanders to include any type of organization they wish. The example on the left is of the three JTF headquarters established in PACOM. Note that their METs are included. The example on the right is of an AEF. Note that this readiness report can go all the way down to the specific UTC that is included in a specific AEF.



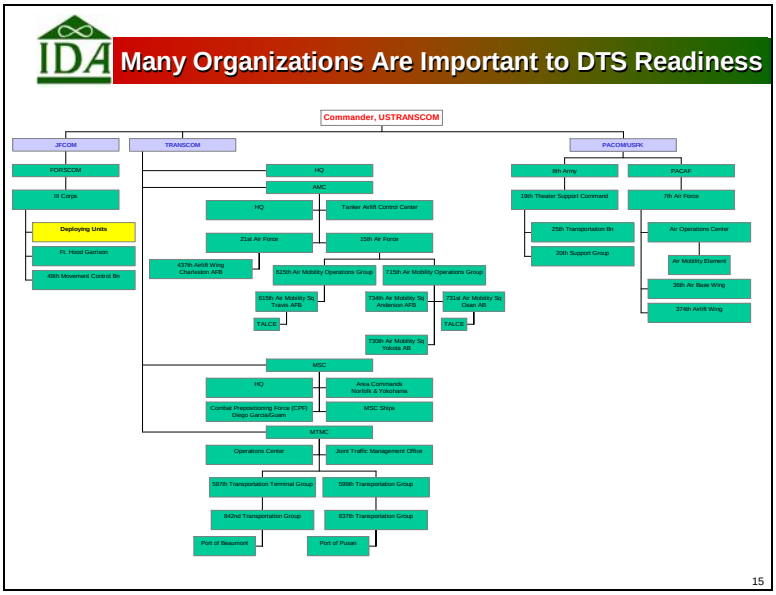
Here is a detailed example of how COMTRANSCOM might view the readiness of the Defense Transportation System. Note that the system itself comes under the control of multiple DoD component heads and only the Secretary of Defense has official oversight of the entire DTS. It might be that the Secretary of Defense would decide to execute his authority and direct the COMTRANSCOM to be responsible for reporting the readiness of the DTS even though he is legally in command of only a portion of the DTS. ESORTS could be designed to facilitate such reporting by allowing all the key participants in the DTS to see where they fit into the DTS and to see where the key readiness shortfalls are that limit the overall throughput of the DTS.



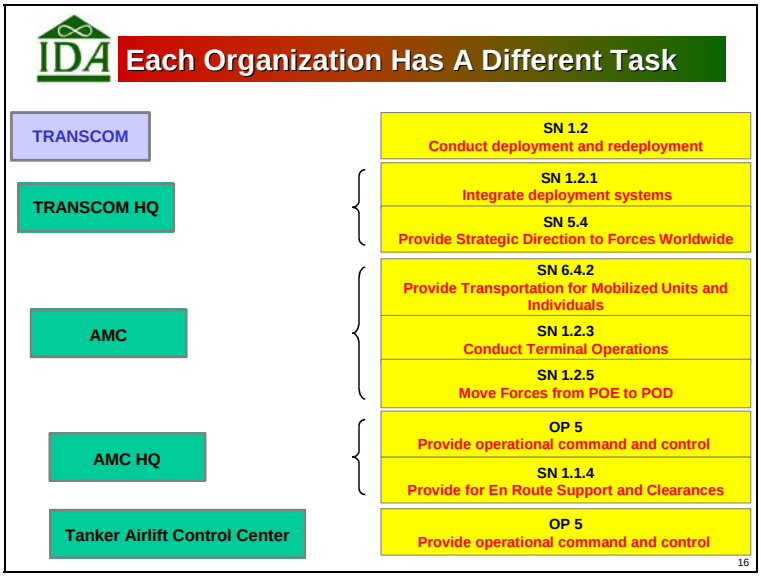
We have based this example on the work being done in JFC and TRANSCOM on the Joint Deployment Process. Note that output of concern to the Defense Transportation System is the delivery of forces and materiel to the tactical assembly area (TAA). Each node in the DTS has an output that must contribute to the overall output of the DTS.



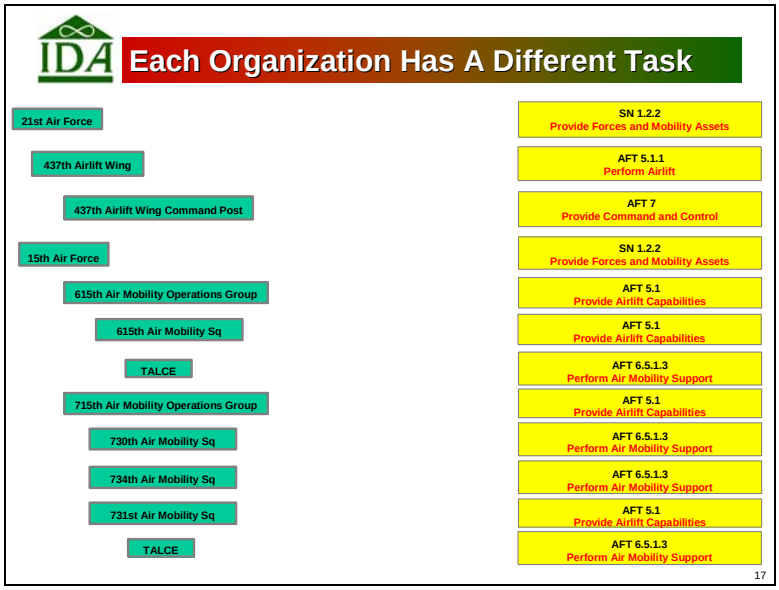
In order to answer the question: "Is the Defense Transportation System Ready to deploy forces to Northeast Asia in support of OPLAN XXX?" the Commander, USTRANSCOM must know the deployment readiness of JFCOM, TRANSCOM and PACOM/CFC. These three commands in turn base their command readiness reports on the "consolidated" reports from their subordinate commands.



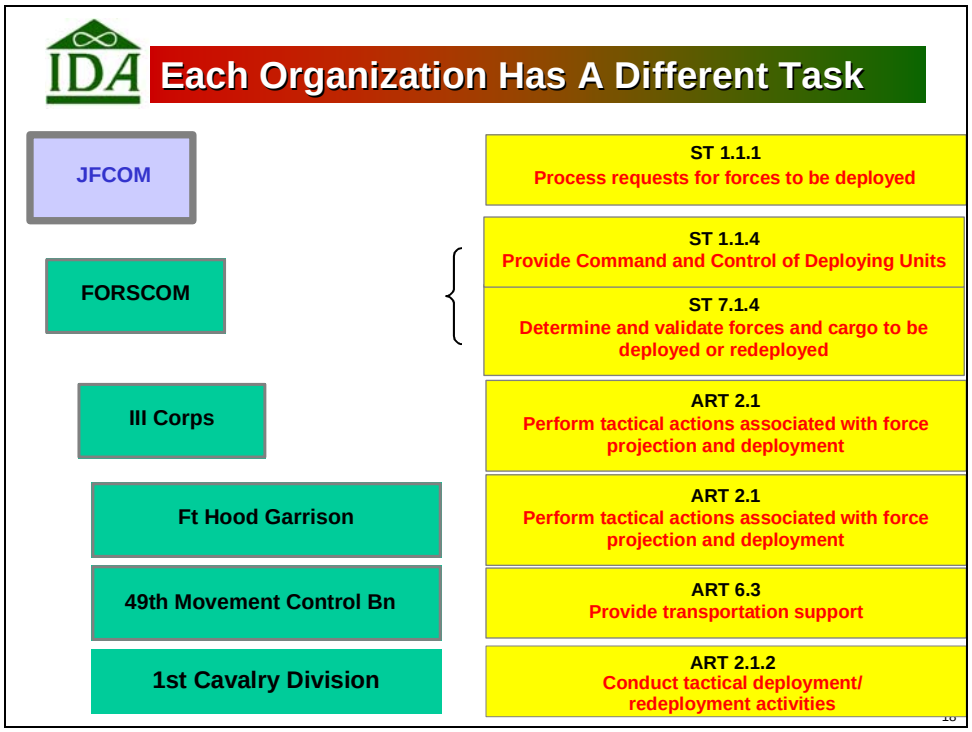
This slide and the four that follow it outline the range of measured units and associated METs whose readiness is important to the overall readiness of the DTS. A glance at the names of the METs associated with each organization suggests that the output associated with the different METs will be quite different. A command and control MET will clearly have a different output than a force movement MET.

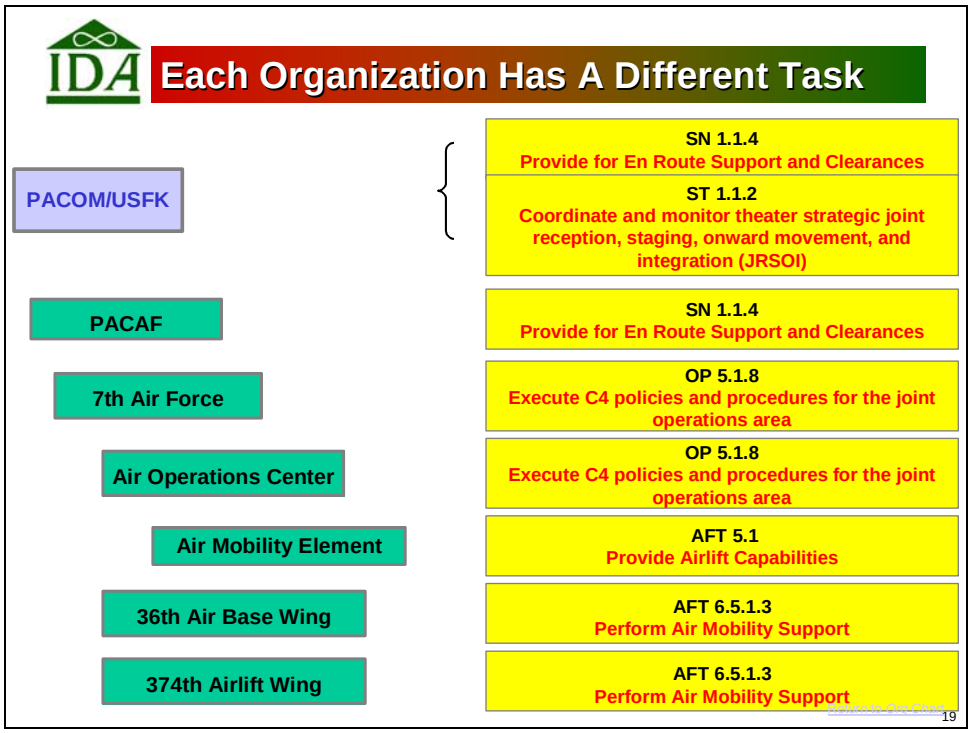


These Air Force units all have existing METs based on their DOCs and the UTC/MISCAPs. These DOCs and MISCAPs provide specific design MET outputs in terms of aircraft provided, size of airfield managed, etc.

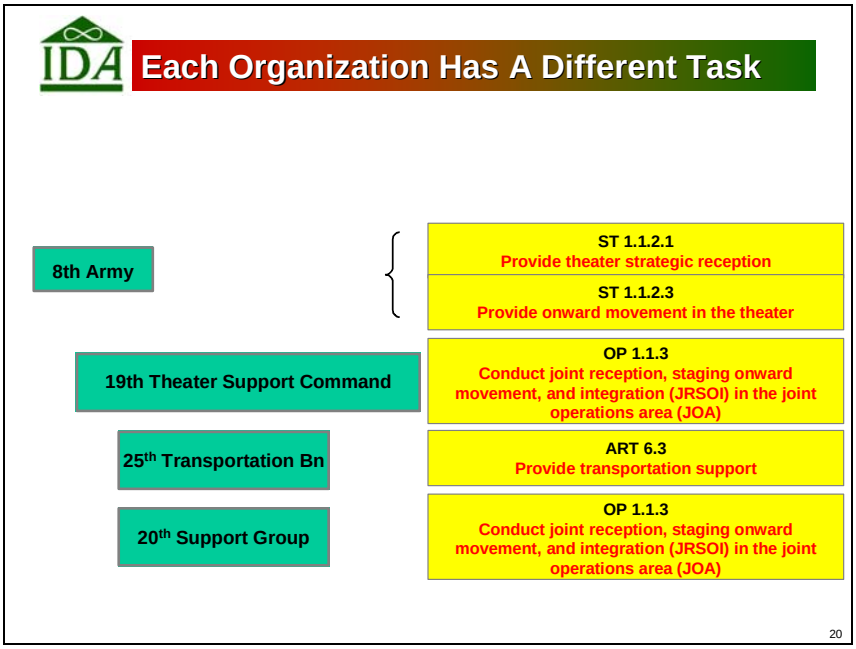


Note that the unit to be moved, the 1st Cavalry Division, in this case has a MET concerning its readiness to deploy.

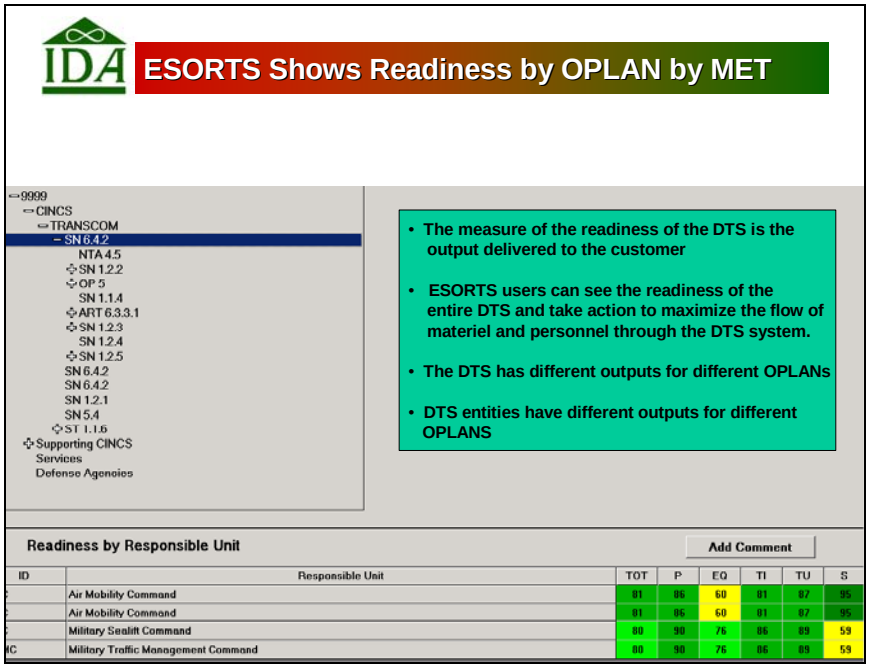




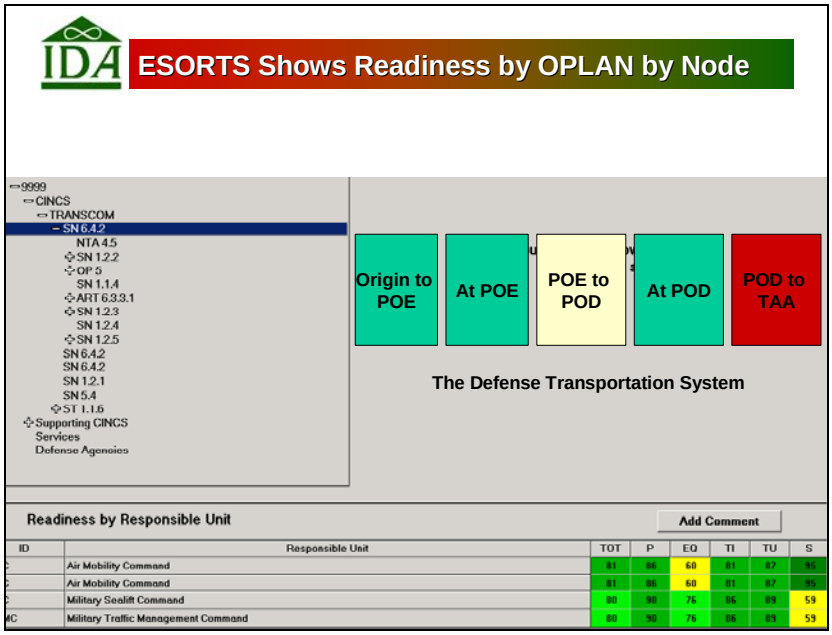
Should the readiness of the DTS be displayed in this way it will be possible to identify the constraint in the system that limits the ability of the system as a whole to deliver forces and materiel to the TAA.



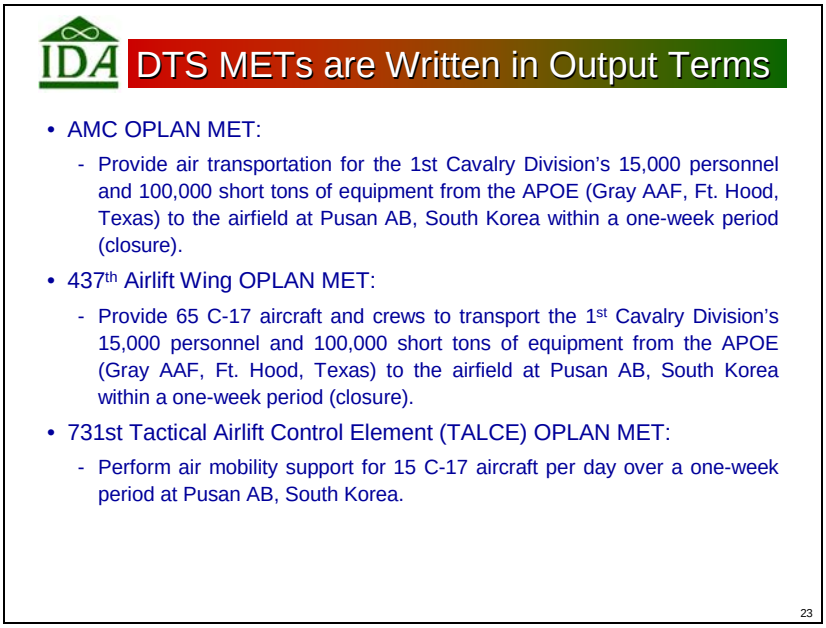
ESORTS can be designed to show readiness by MET and by organization



ESORTS can also be programmed to show readiness by node. Note that there are many measured units whose readiness contributes to the readiness of a node.



Here are some examples of assigned METs for units in the DTS. Each of these units will have a set of design METs that may be modified as necessary to meet the needs of the operational commander in the execution of an assigned mission. In this case the mission is to move the 1st Cavalry division to Korea. If the mission were to move to a different theater or to move a different unit, the assigned METs would very likely be different.



It is our belief that most of the data needed for units that currently report in GSORTS is available in DoD databases or on paper. It is within the state of the art to incorporate all of these data into ESORTS.

ESORTS standards for entities that do not currently report in GSORTS will have to be developed. Much of that data already exists and simply needs to be incorporated into ESORTS. In those cases where a readiness-related unit does not know its design METs or what its assigned METs might be, the chain of command will have to develop these data. This is a reasonable task for the chain of command even in the absence of ESORTS. Certainly service or agency entities with readiness related duties should know what they are, what it takes to do each job, and what their status is even if there were no ESORTS.

Appendix D
REPORTING READINESS OF A SYSTEM
THE DEFENSE TRANSPORTATION SYSTEM

Appendix D
REPORTING READINESS OF A SYSTEM, THE DEFENSE TRANSPORTATION SYSTEM

Reporting the readiness of a "system" is a new aspect of the DRRS. A system is essentially a compilation of tasks that are performed by a wide variety of separate organizations. To know the readiness of the "system" requires knowing the readiness of all component organizations to perform their respective tasks. A system's tasks are by nature hierarchical, both organizationally and operationally. The following presentation illustrates the task hierarchies of one such system, the Defense Transportation System (DTS).

The Defense Transportation System example outlined below uses a notional unit deployment to illustrate how intricate and interlocked readiness reporting is in a system. It presents the tasks involved in the deployment of the 1st Cavalry Division from Ft Hood to its assembly areas in Korea. It is not focused solely on TRANSCOM's readiness—the deployment of the division requires a number of other organizations also to be ready.

The presentation shows the tasks in three different views: from a nodal (temporal/geographic) viewpoint; in terms of the various organizational hierarchies; and in terms of a task hierarchy. Obviously, the example is scoped down a great deal from reality, moving only a single unit using only a limited portion of AMC, MTMC and MSC assets. We make no claim that this presentation is a complete representation of the entire task chain that actually makes up the DTS. It nevertheless shows the detailed information necessary to accurately depict the "system" and provides a good illustration of the complexity, both in depth and in breadth, of any task "deconstruction" effort.[1]

The following figure is adapted from Joint Pub 3-35. It shows the overall context of the Joint Deployment Process that forms the basis for the example.

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[1] We used the task wordings (and numbering) currently found in the current versions of the UJTL and the service task lists. In the process of "deconstructing" the tasks involved in the DTS, we found several areas where these lists need to be modified to make them more useful to the readiness reporting community. See Chapter IX for more details on these recommendations.

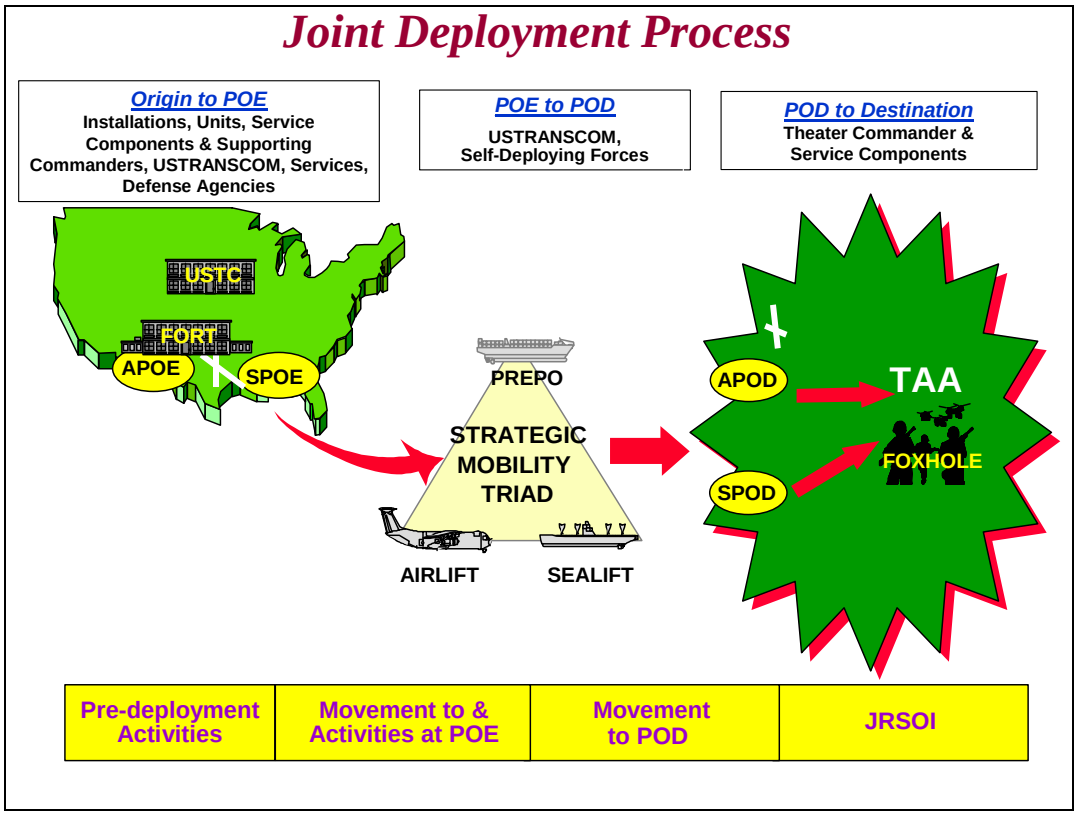

Figure D-1. The Joint Deployment Process

Reporting the overall readiness of the Defense Transportation System would likely be a responsibility of the Commander, USTRANSCOM. The context for the DTS to perform its tasks is illustrated below. In order for the warfighting commander to execute his OPLAN, he is dependent on forces both assigned to him (in theater) and apportioned to him (generally out of theater). The DTS is designed to get out-of theater forces to the warfighting commander.[2]

2 III Corps/1st CAV has planning responsibility to the POE. The 1st CAV DIV has a command relationship with FORSCOM until arrival in the Supported Commander's AOR or JOA.

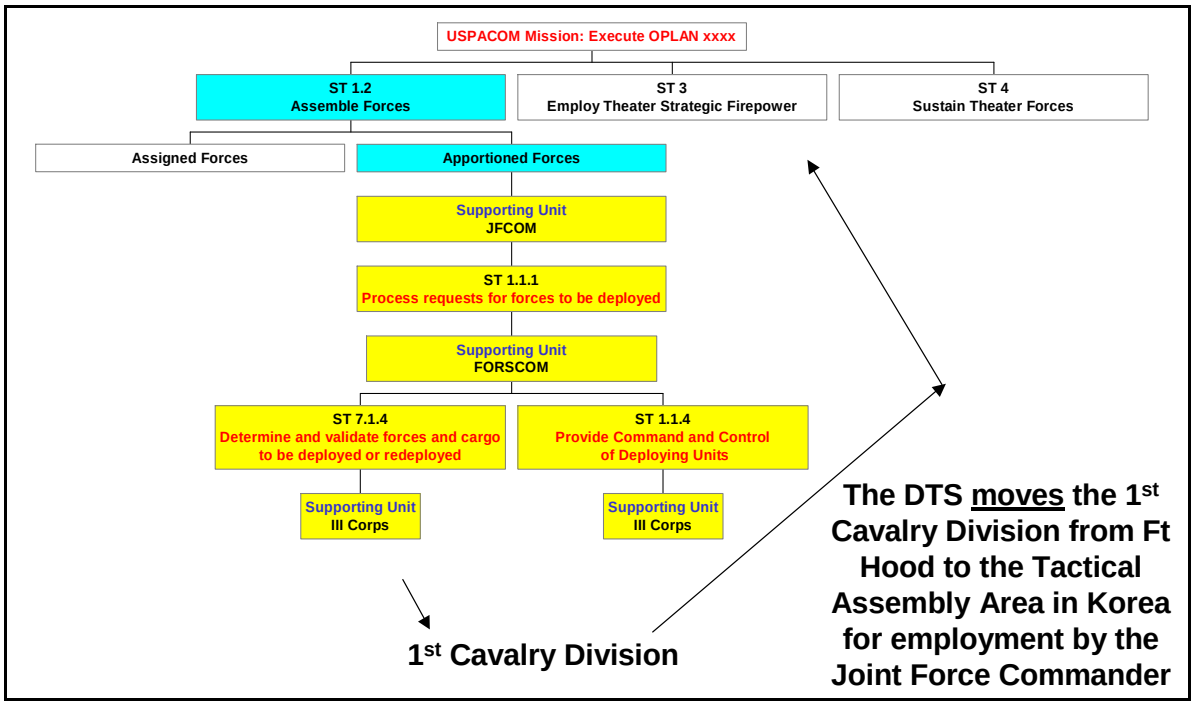

Figure D-2. DTS Context

In order to answer the question: "Is the Defense Transportation System Ready to deploy forces to Northeast Asia in support of OPLAN XXX?" the Commander, USTRANSCOM must know the deployment readiness of not only the actual transporters, but also of numerous other organizations in JFCOM, TRANSCOM and PACOM/CFC. These three combatant commanders base their command readiness report on the "consolidated" reports from their subordinate commands. In the DTS, there are a large number of organizations that must be ready to perform their individual tasks.

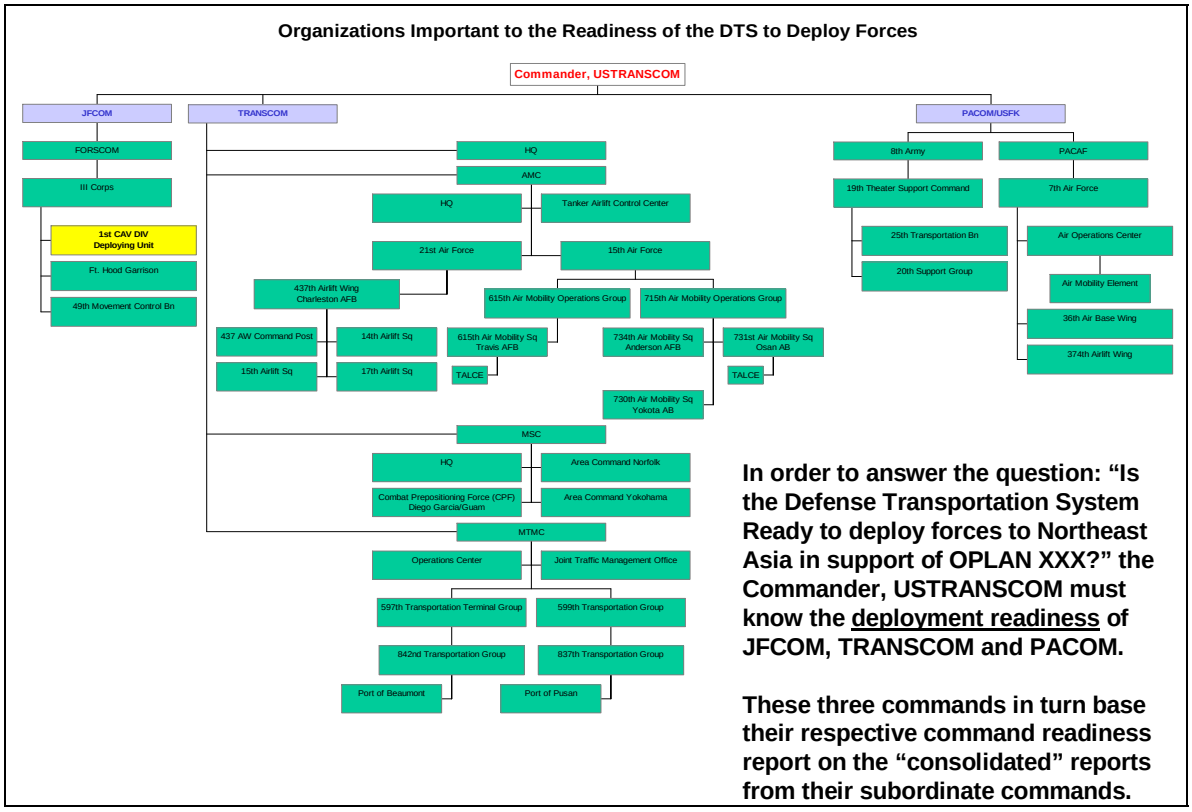

Figure D-3. Organizations Involved in Deployment

Geographic View[3]

This view is based on the spatial orientation of the Joint Deployment Process. It clearly shows the interrelationships between the tasks of various organizations at the various physical nodes that are involved in and used by the DTS. The following slides show both the tasks that must be accomplished at any particular node and the organization that is responsible for performing each task.

The readiness of the DTS to deploy a force is meaningless unless that force itself is ready to deploy. A unit's deployment tasks are separate from its operational tasks. Both the 1st Cavalry Division (Figure D-4) and its parent, III Corps (Figure D-5) have tasks associated with deployment. These must be completed prior to arrival at the Port of Embarkation (POE).

3 The tasks in red font are the primary tasks. When identified, subordinate and supporting tasks internal to the organization are shown in purple (lighter) font.

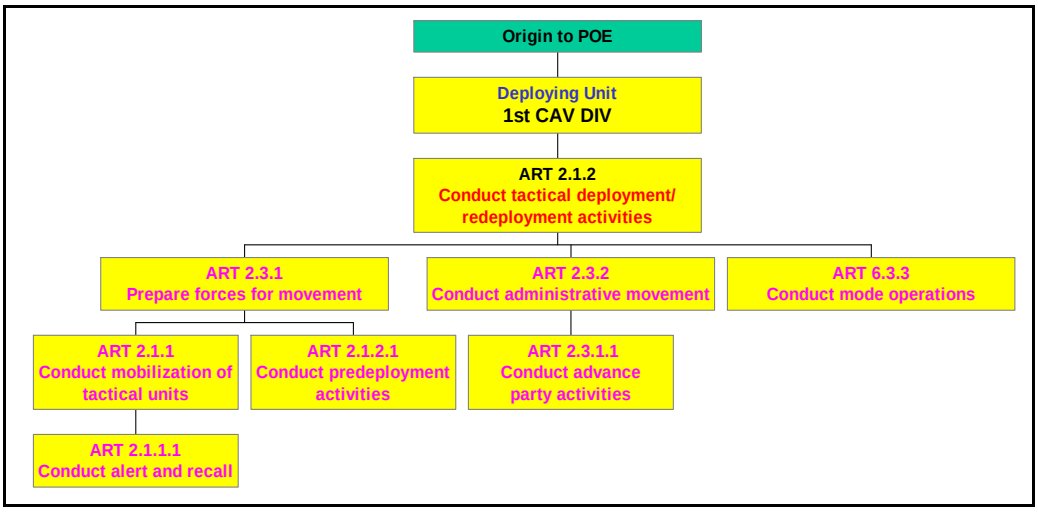

Figure D-4. 1st Cavalry Division's Deployment METL

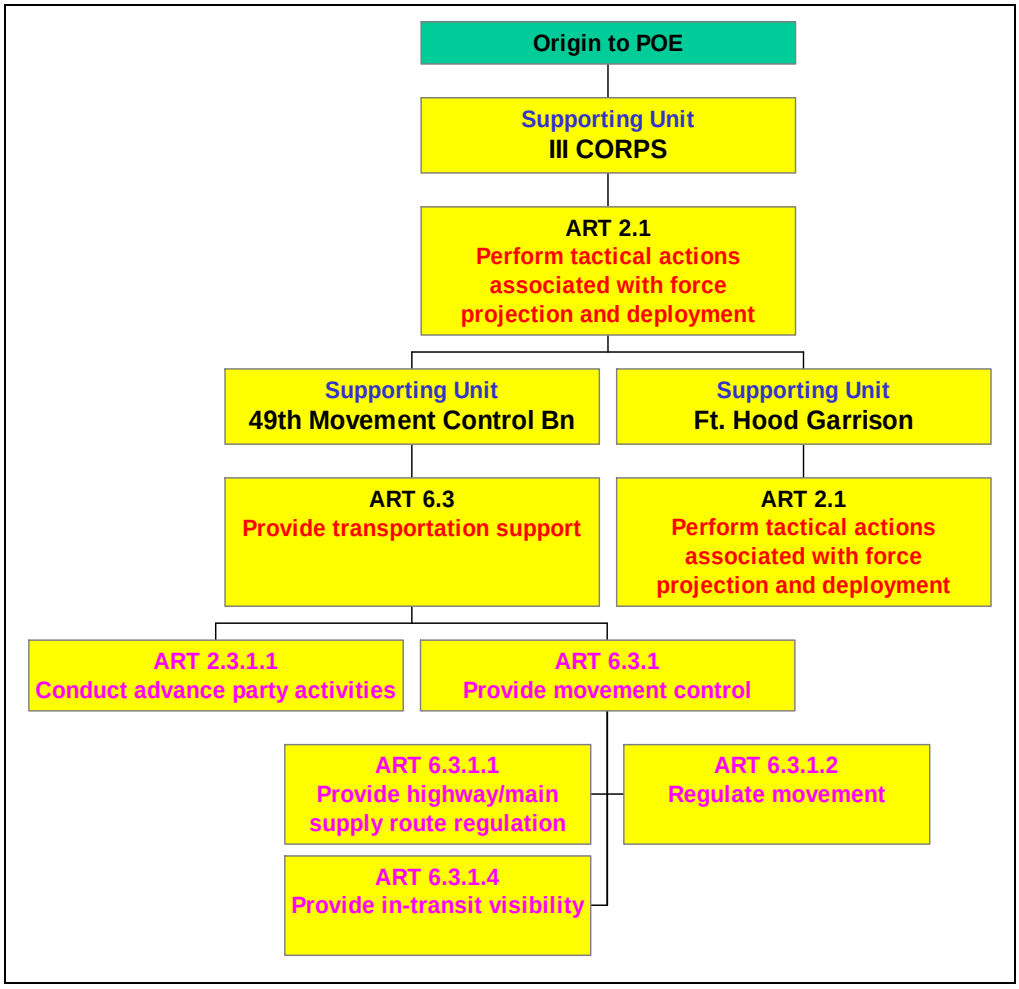

Figure D-5. Origin to POE—III Corps

USTRANSCOM and its subordinate organizations also have a number of tasks that must be completed prior to the actual movement of forces. For simplicity sake, we use only a limited number of the organizations and transportation assets that would be used in an actual deployment. Notice that not only are the subordinate organizations identified and "assigned" tasks, but the respective headquarters are also.

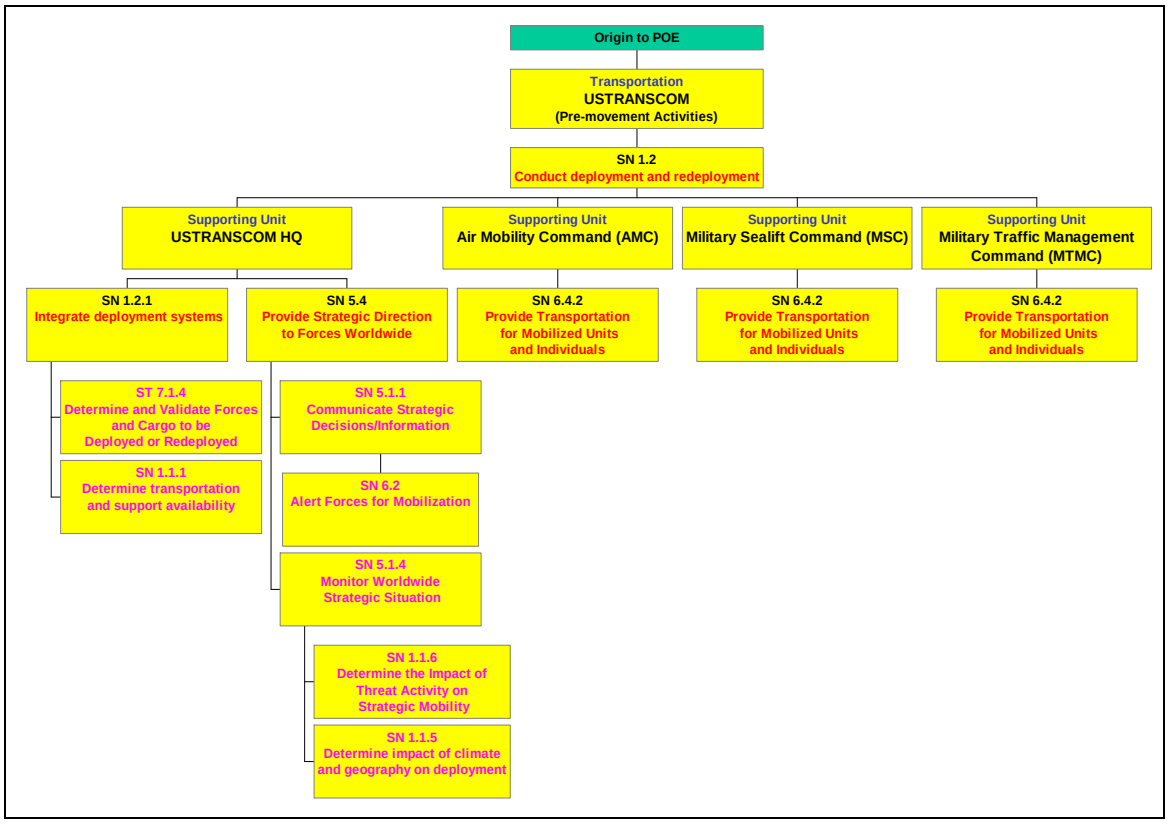

Figure D-6. Origin to POE—TRANSCOM

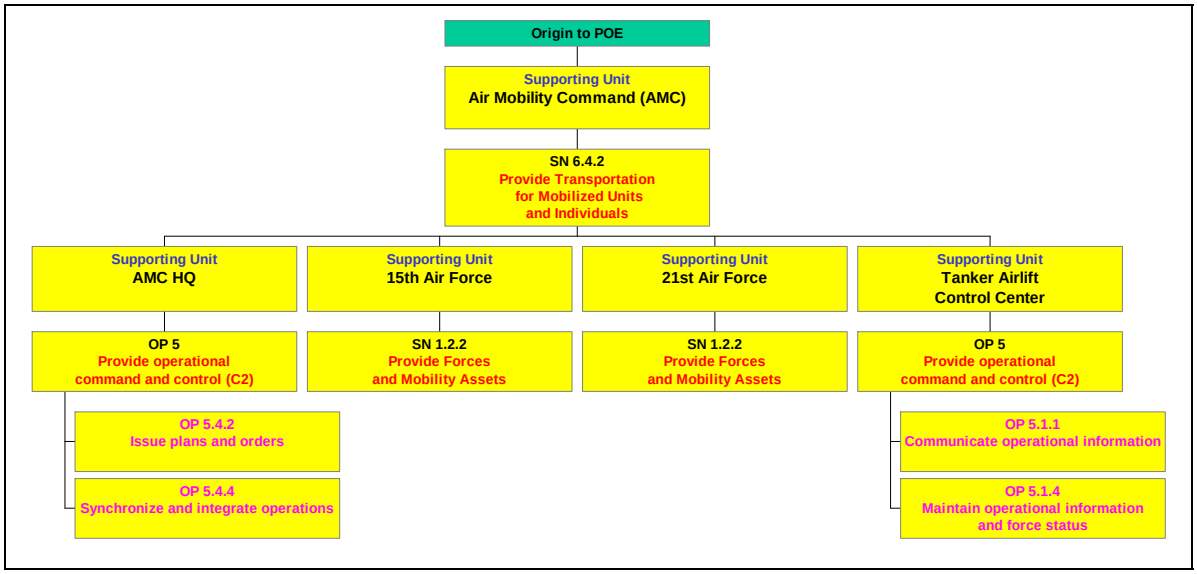

Figure D-7. Origin to POE—AMC

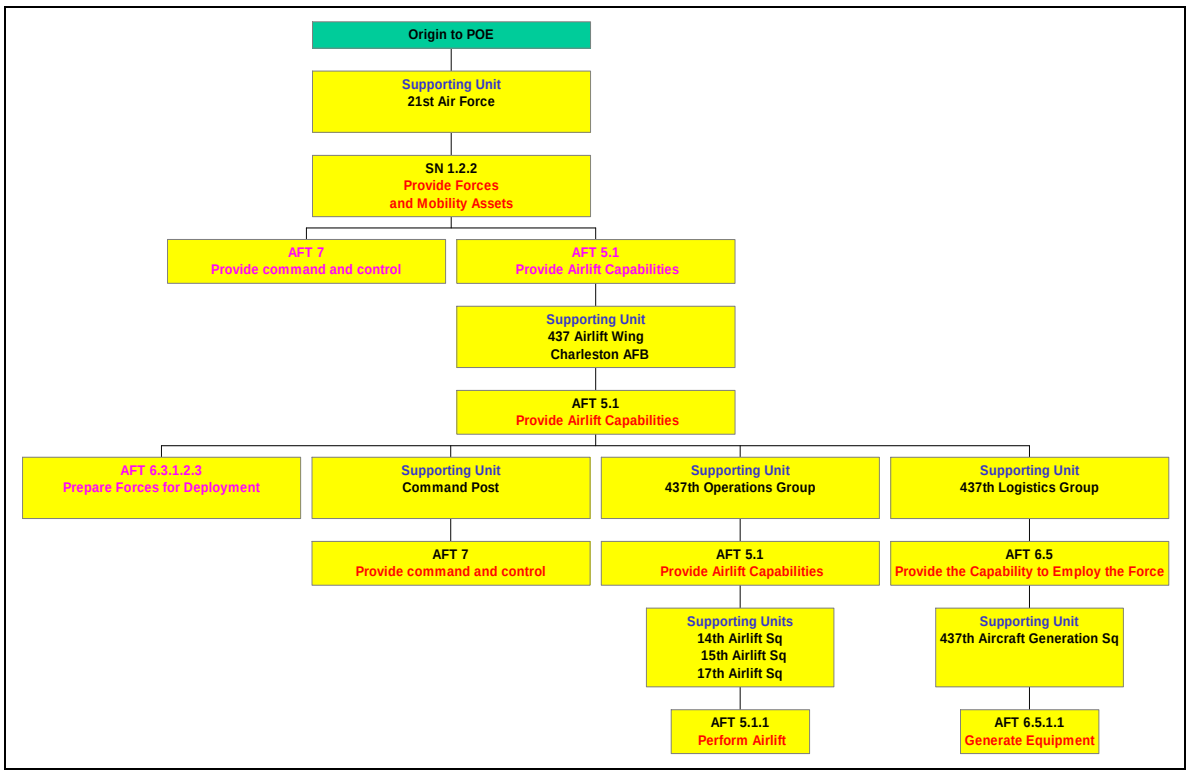

Figure D-8. Origin to POE—21AF

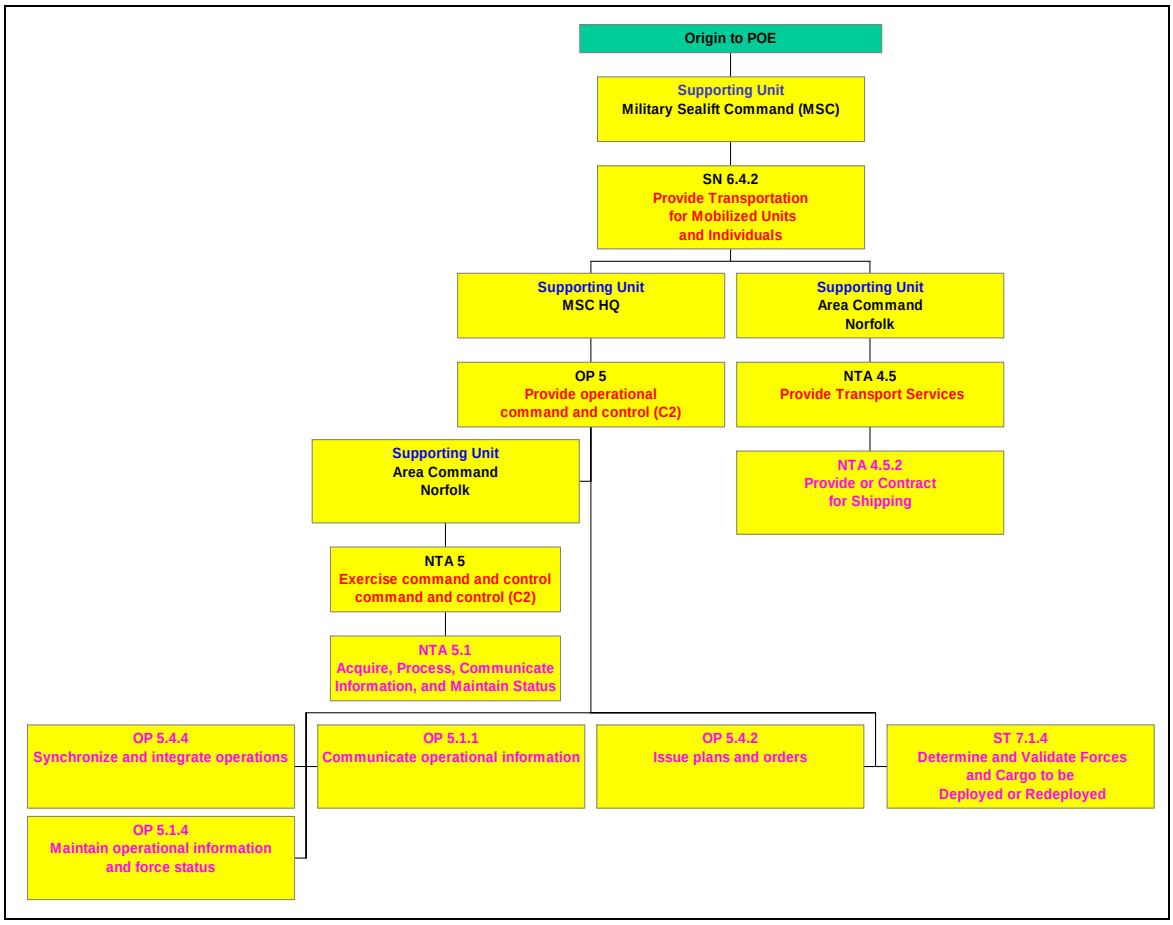

Figure D-9. Origin to POE—MSC

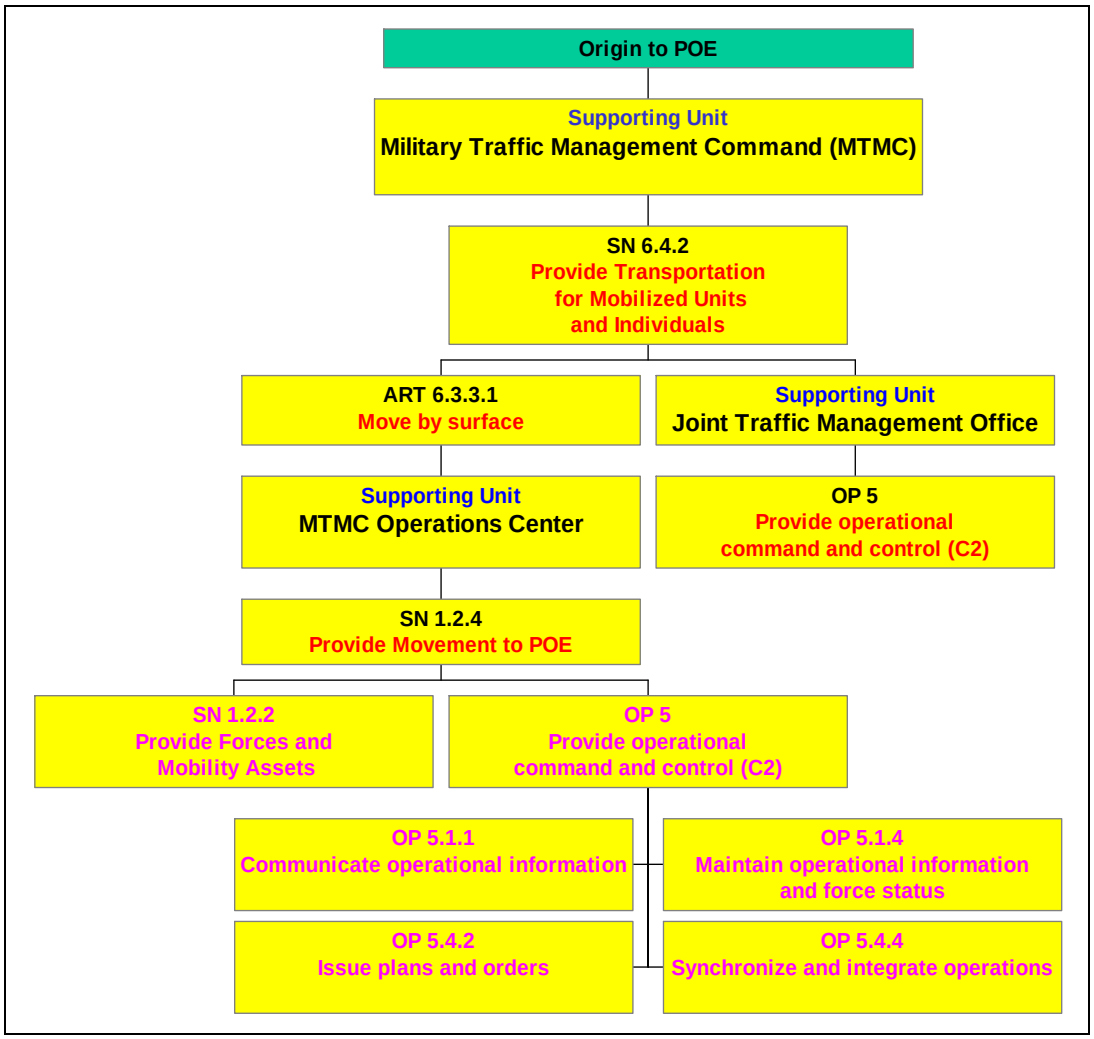

Figure D-10. Origin to POE—MTMC

There are also tasks that must be accomplished at the ports of embarkation prior to the actual movement of the force.

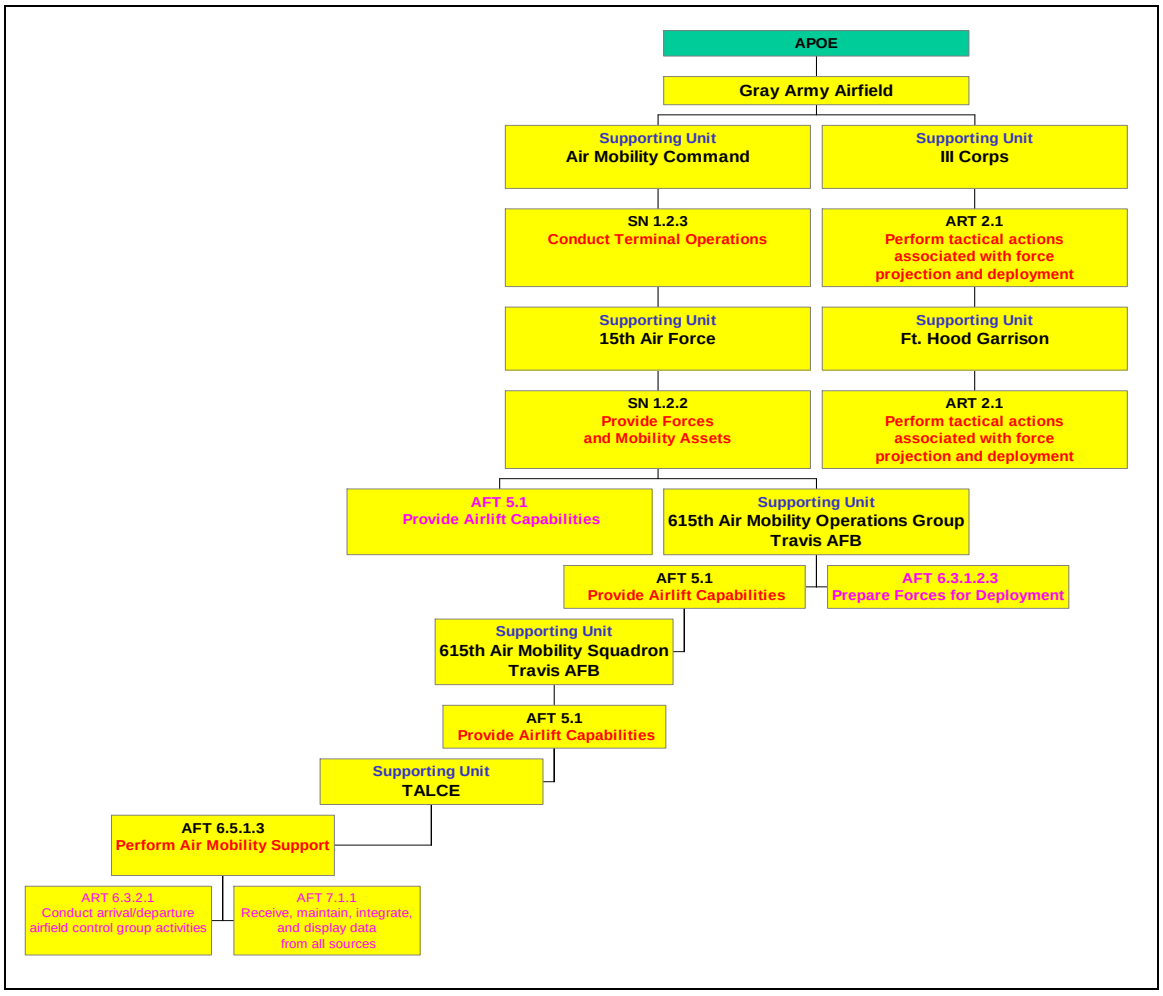

Figure D-11. At the POE—Gray Army Airfield

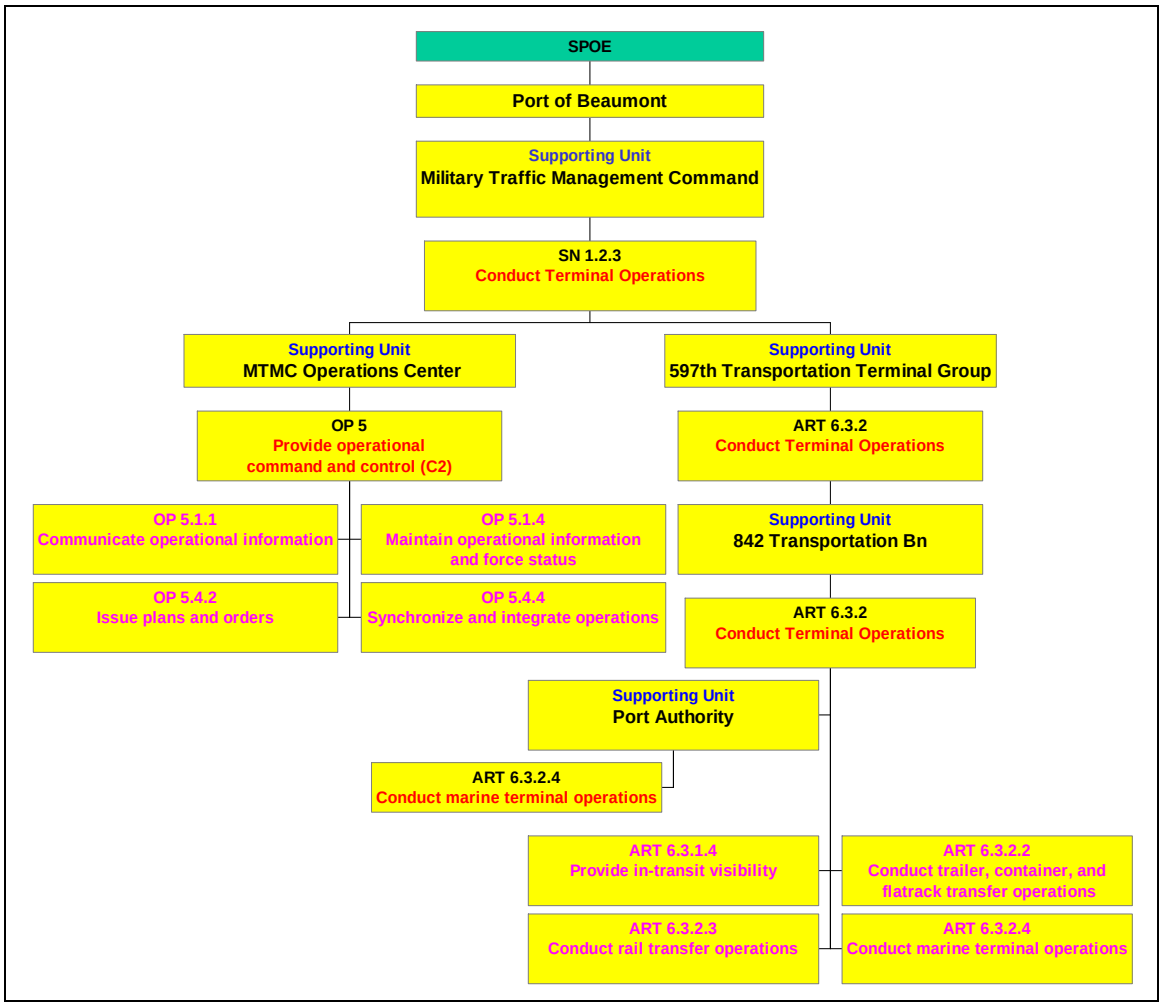

Figure D-12. At the SPOE—Beaumont

USTRANSCOM is fully involved in the actual movement of the force from the ports of embarkation to the ports of debarkation. Not only do the actual "transporters" have a task to accomplish (i.e., the physical movement of the force), but also there are a number of additional organizations that are responsible for enroute support.

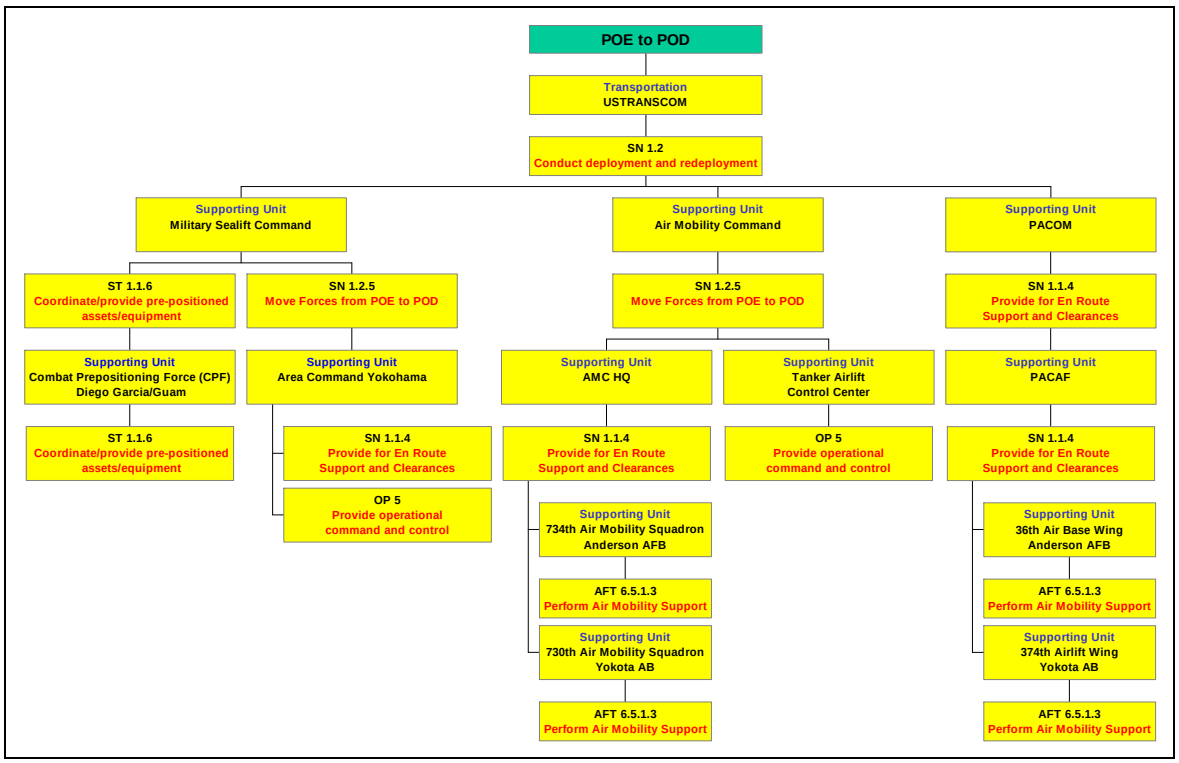

Figure D-13. POE-POD

USTRANSCOM Components are responsible for tasks at the Ports of Debarkation.

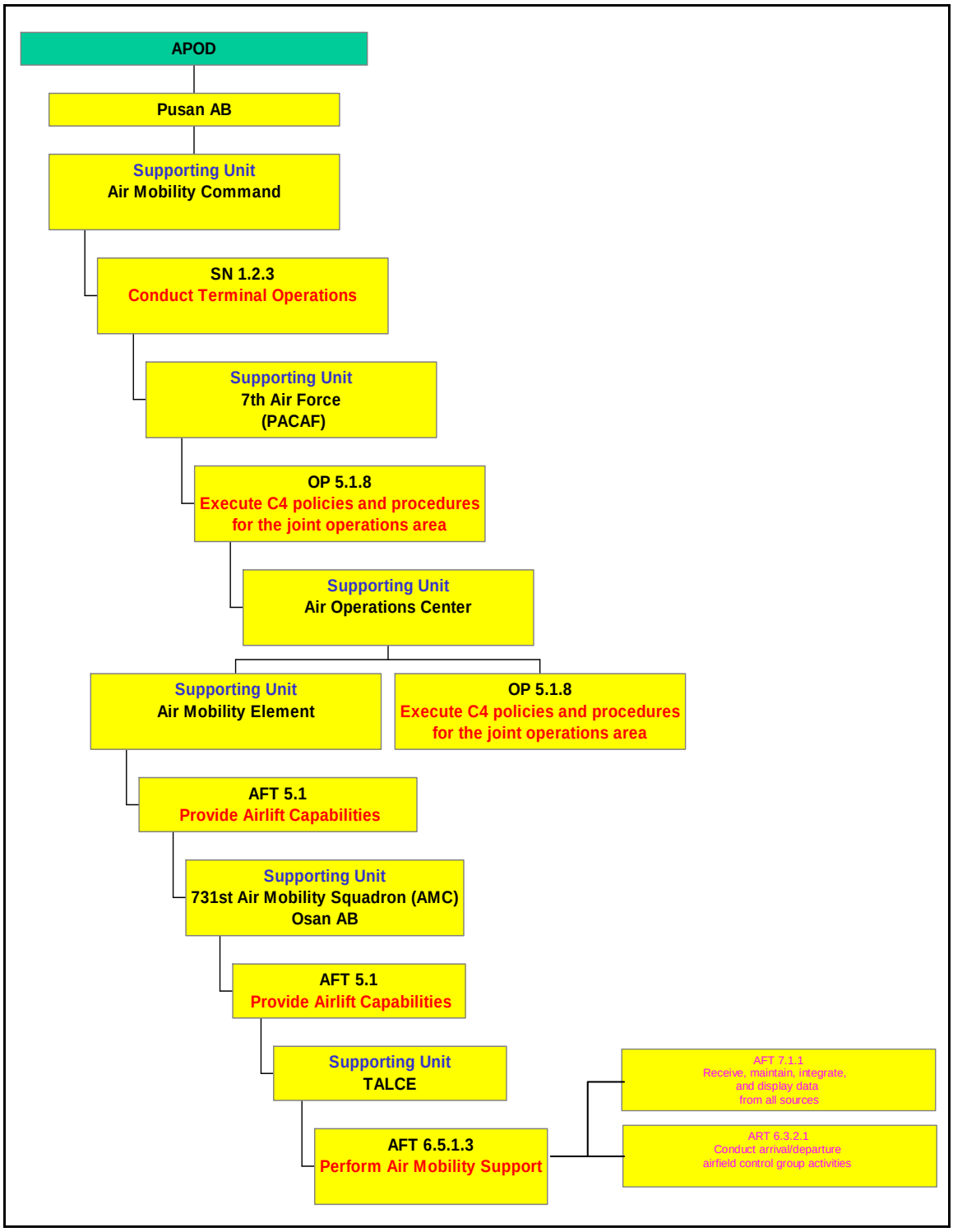

Figure D-14. At the APOE—Pusan

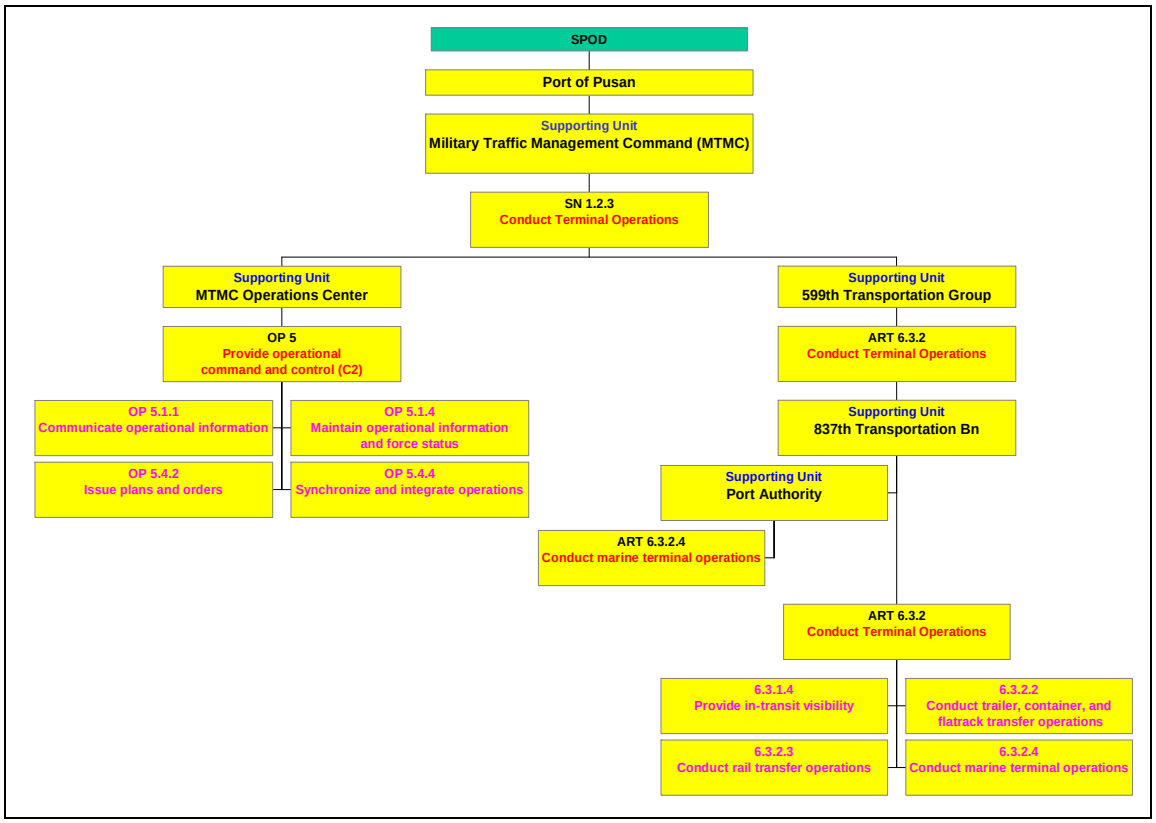

Figure D-15. At the SPOE—Pusan

After arrival at the Ports of Debarkation, PACOM and USFK organizations begin their respective tasks of moving the force onward into the pre-designated assembly areas.

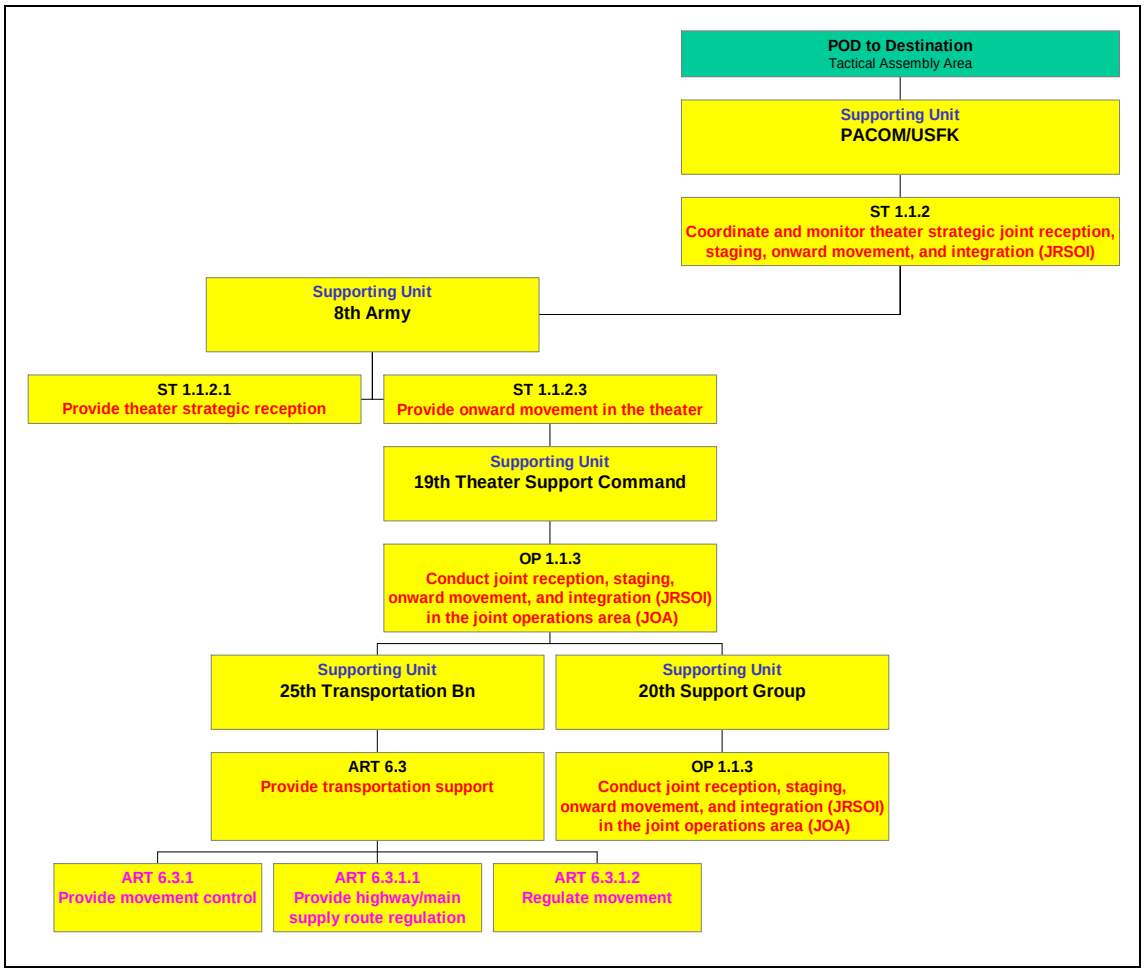

Figure D-16. POD to Destination

Organizational View

The above section provides a good illustration of how the tasks conducted by various organizations relate to each other in a spatial view. This view works well for a system such as the DTS, but other systems may be better represented using a temporal view. The tasks comprising all systems, however, can be viewed in relation to the organization that performs them. The following figures illustrate the same tasks as we showed above but listed by the responsible organization within its respective Combatant Command chain of command. One advantage of this view is that it is easy to see the relationship between the tasks of subordinate and parent organizations.

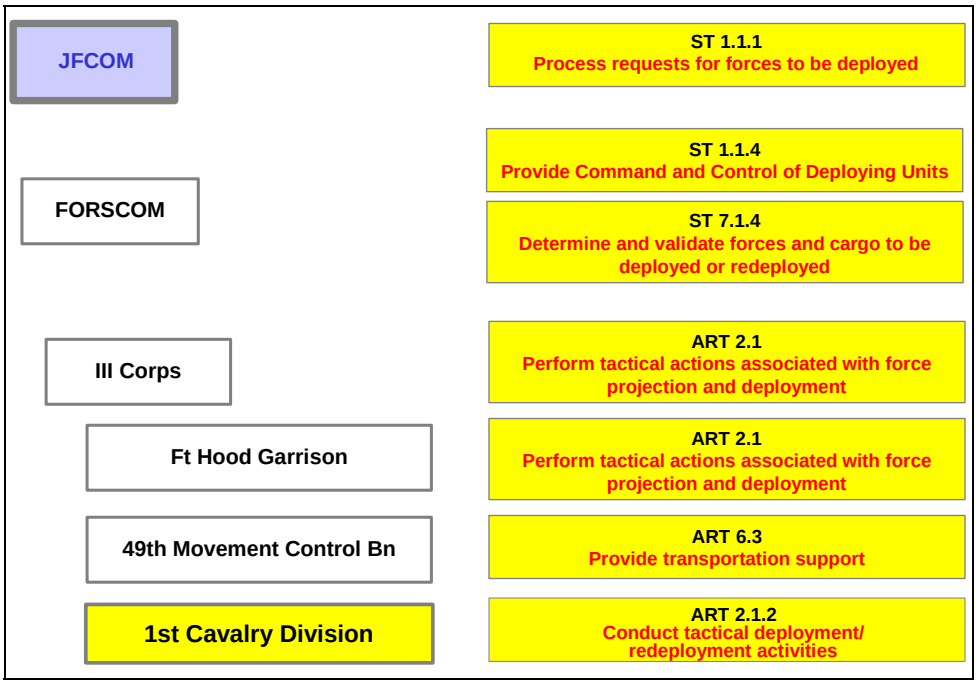

Figure D-17. JFCOM Organizations

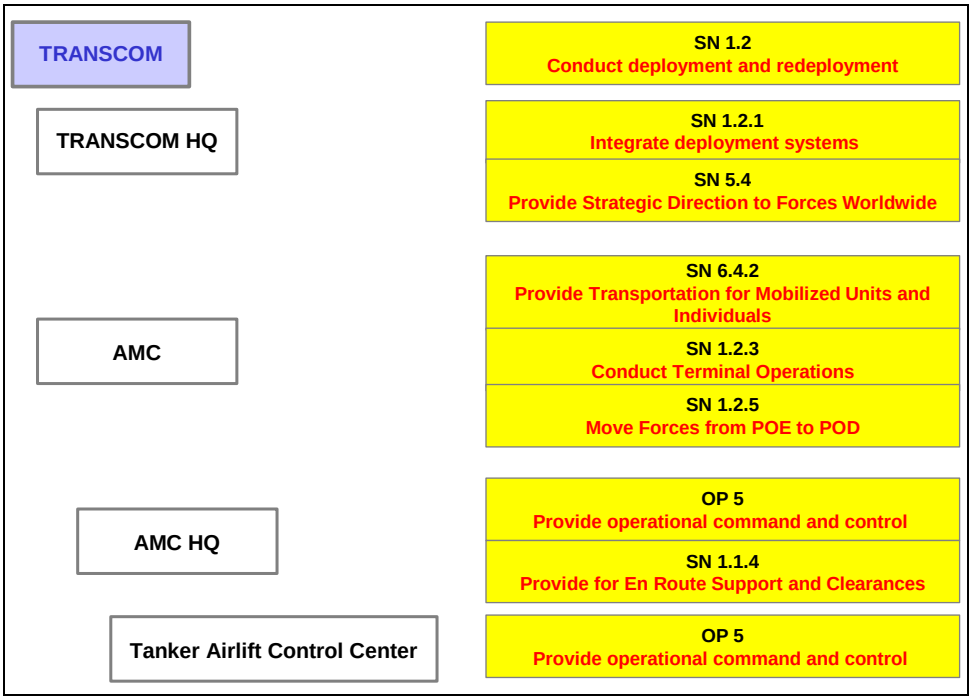

Figure D-18. TRANSCOM Organizations

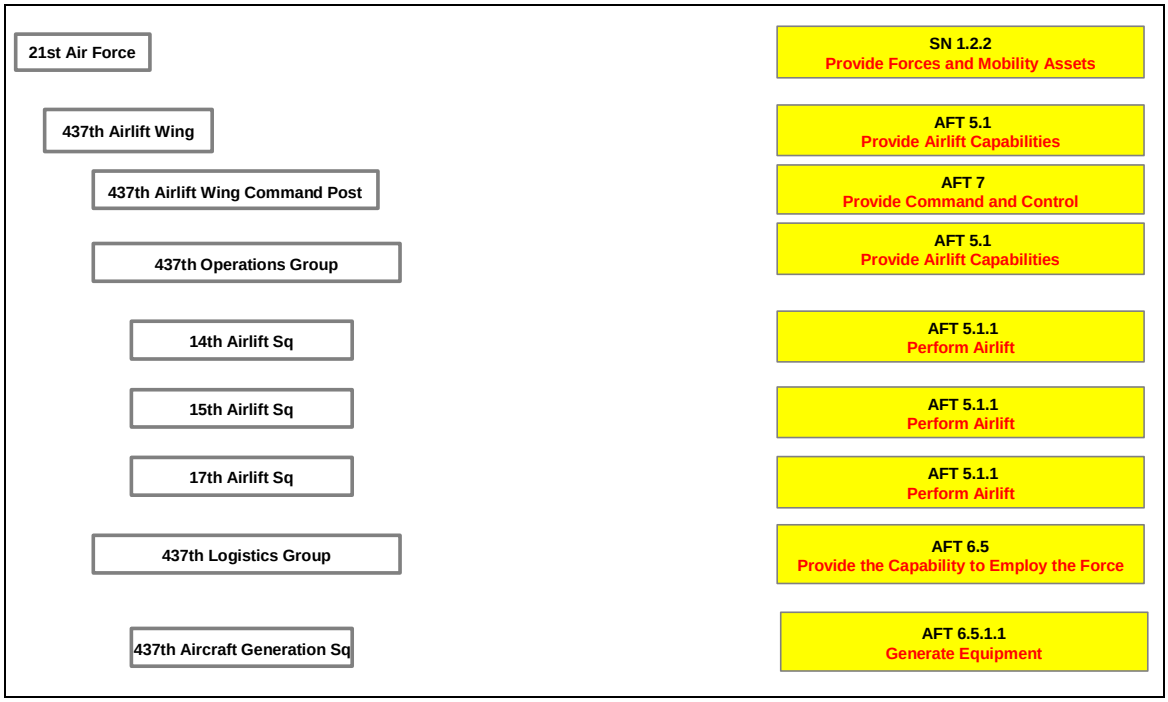

Figure D-19. 21 AF Organizations

Figure D-20. 15 AF Organizations

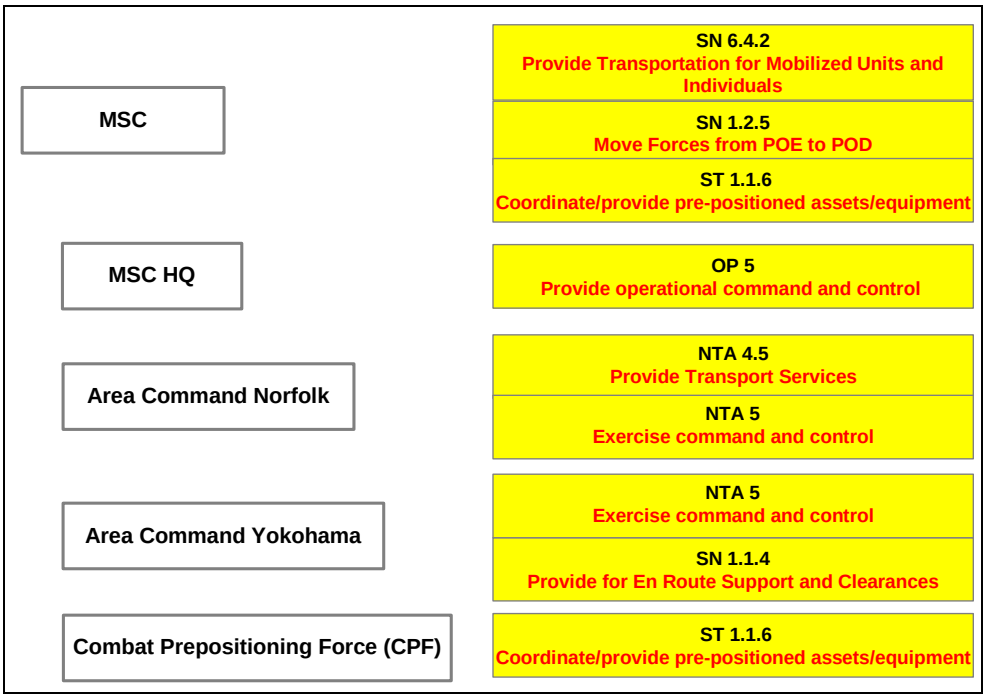

Figure D-21. MSC Organizations

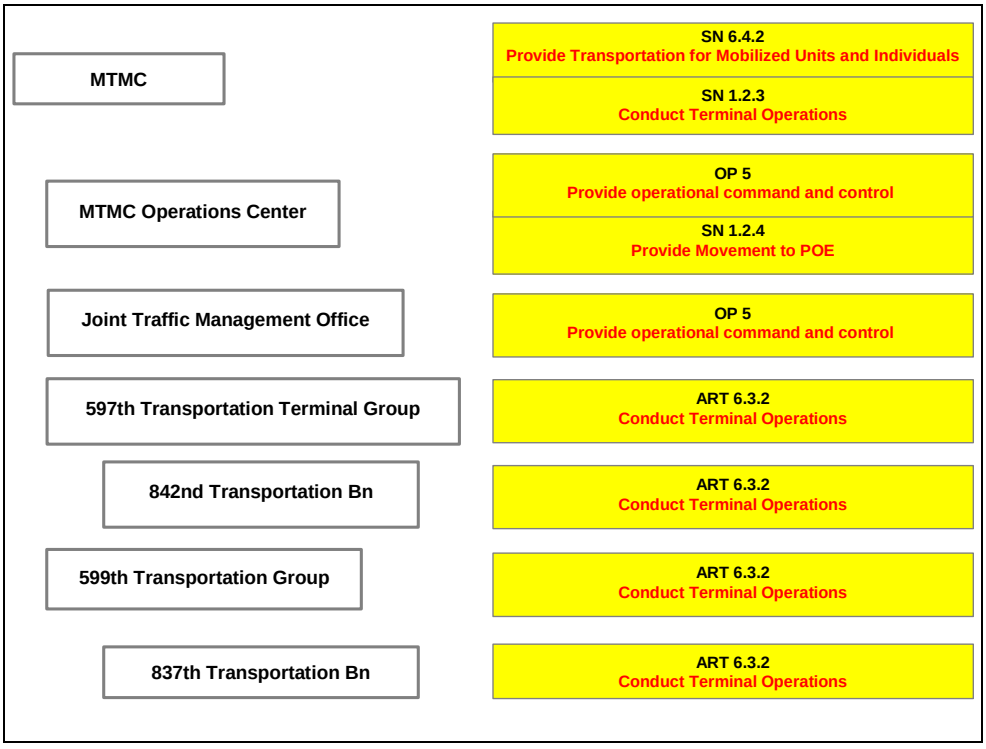

Figure D-22. MTMC Organizations

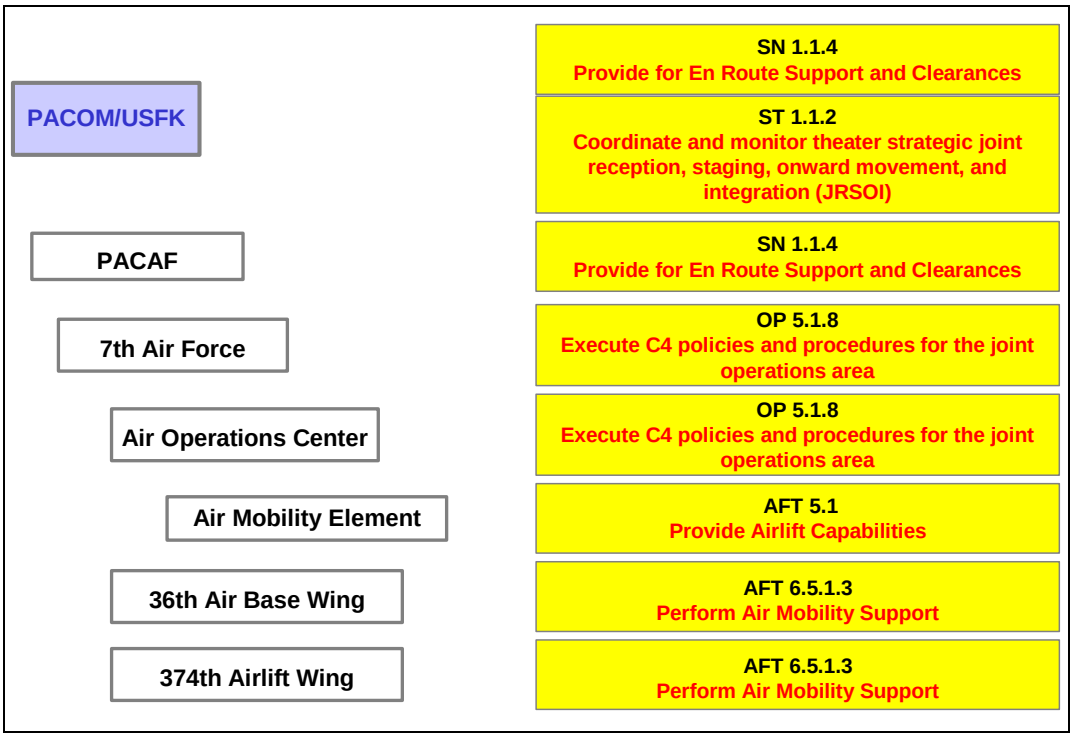

Figure D-23. PACOM Organizations

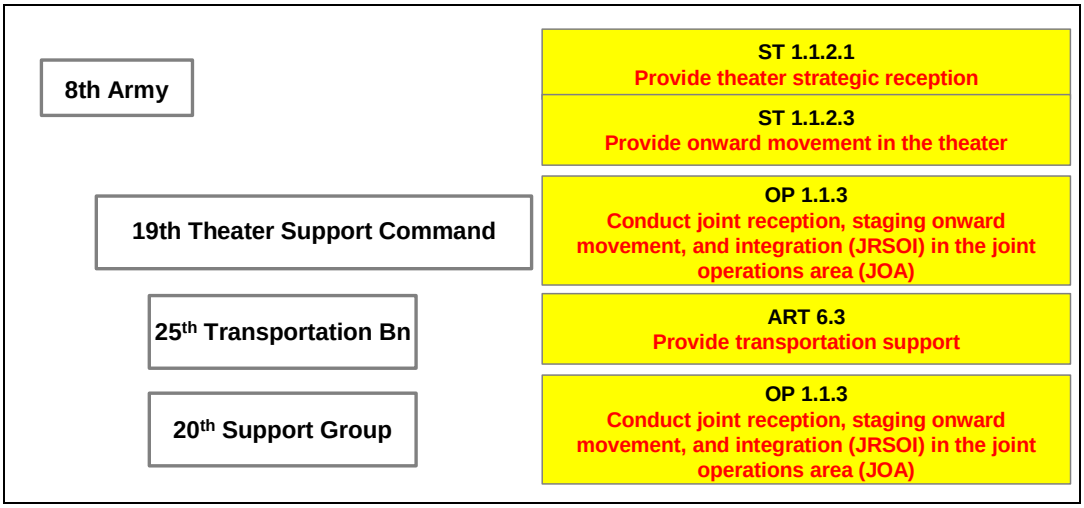

Figure D-24. 8th Army Organizations

METL View

This final view shows the tasks the USTRANSCOM commander is specifically responsible for performing. In the DRRS, the commander would be required to report the command's readiness to perform one task—Conduct Deployment and Redeployment.

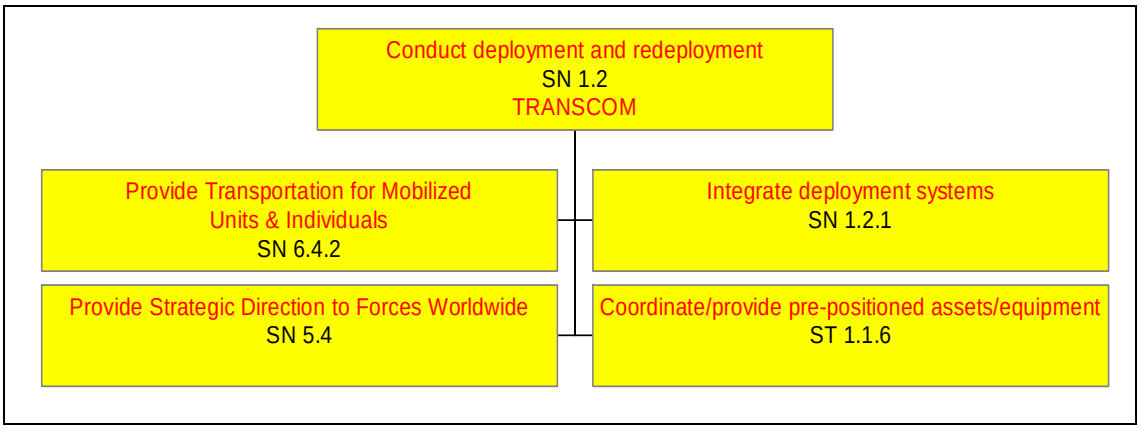

Figure D-25. TRANSCOM METL

Accomplishment of this single task is dependent on the accomplishment by some part of the command of four primary subordinate tasks. Two of these tasks are in turn dependent on the accomplishment of their own hierarchy of subordinate tasks. These are illustrated in the following two figures.

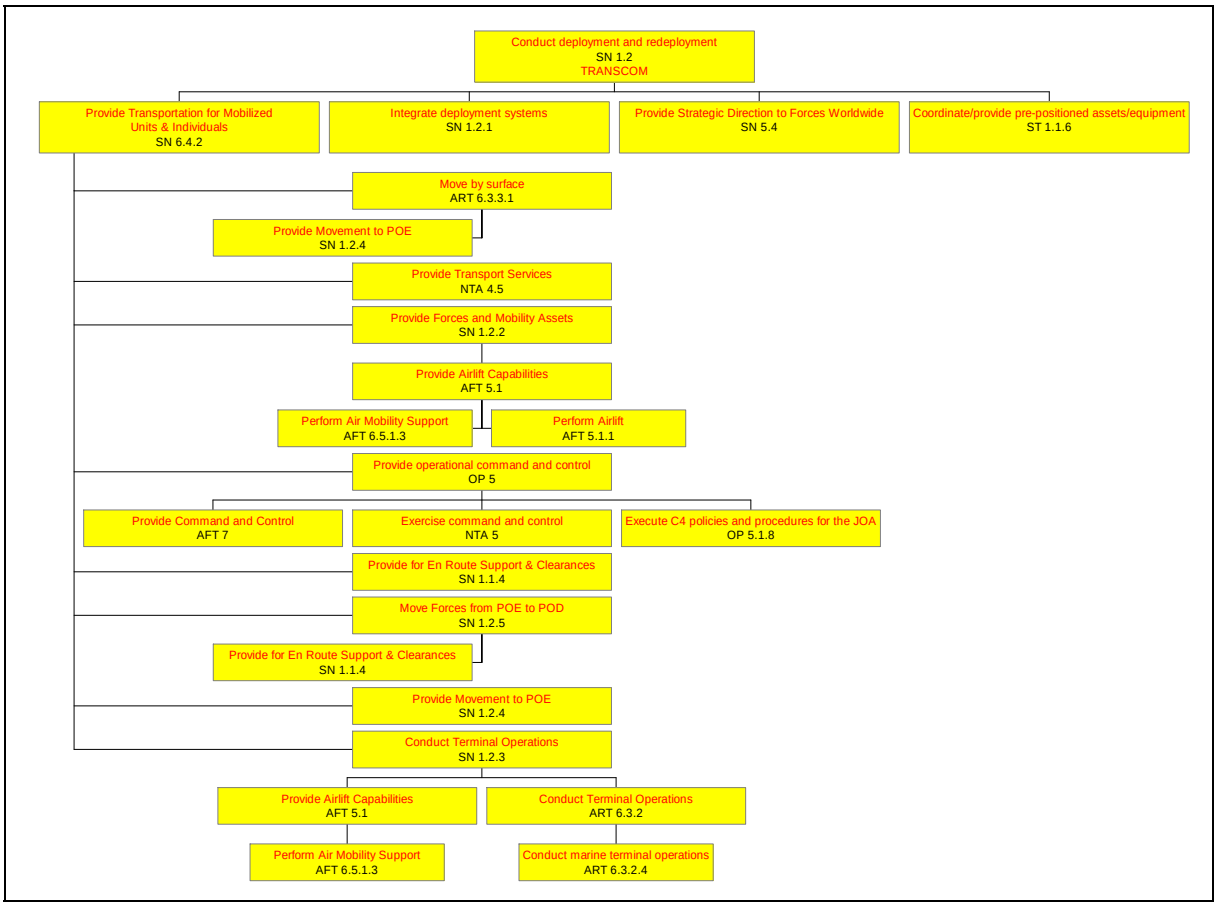

Figure D-26. TRANSCOM MET Hierarchy 1

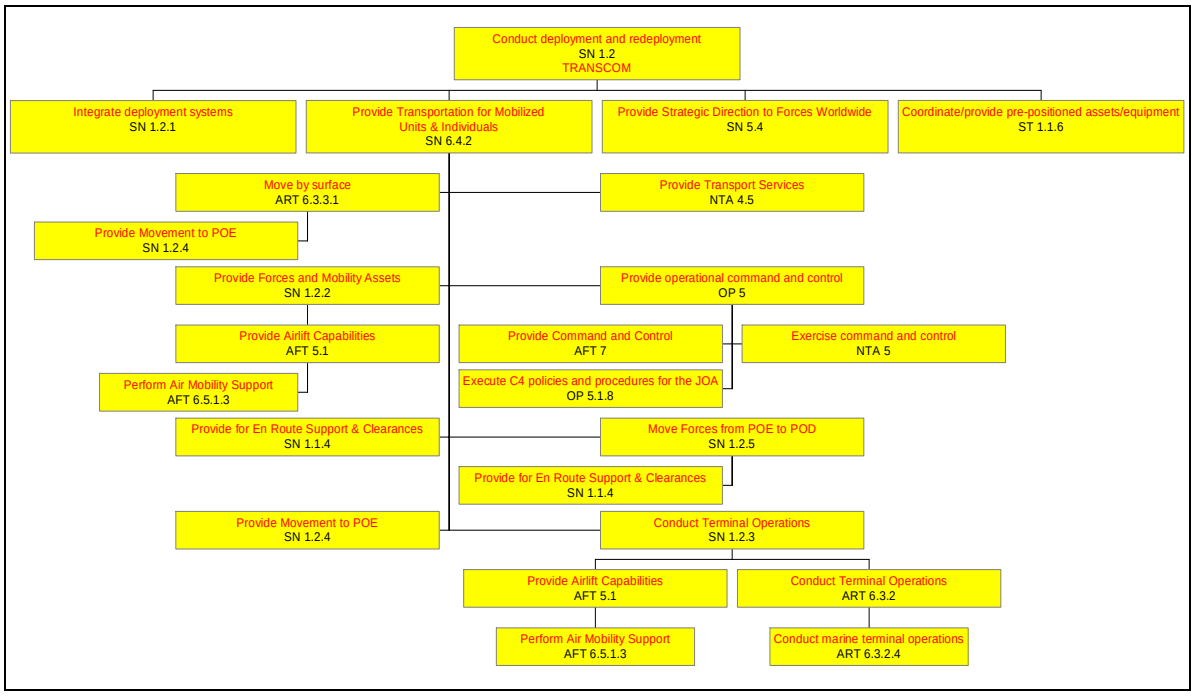

Figure D-27. TRANSCOM MET Hierarchy 2

Should the Secretary of Defense decide he wanted one subordinate to be responsible for reporting the readiness of the entire DTS, he might require COMTRANSCOM to report the readiness, not only of his command, but also of the entire DTS. In this case COMTRANSCOM would be responsible for reporting the readiness of the entire DTS even though he did not command the entire DTS.

Appendix E
REPORTING READINESS OF A SYSTEM
THE PRECISION STRIKE SYSTEM

Appendix E
REPORTING READINESS OF A SYSTEM, THE PRECISION STRIKE SYSTEM

Appendix D demonstrated how system readiness could be analyzed, using the Defense Transportation System (DTS) to model the methodology. A task common to most military combat operations today involves carrying out precision strike operations against a wide range of targets. There are a large number of capabilities and organizations required to execute the precision strike mission, and we can analyze these capabilities and organizations as a system—the precision strike system—in exactly the same manner as we looked at the DTS. If the Joint Force Commander is going to be able to assess his readiness to carry out his precision strike mission, he must know the readiness of the overall system; and he will want to be able to identify any constraints within the system—factors that reduce his readiness.

The Joint Force Commander knows he has specific units assigned to him and that those units have specific design capabilities. However, what he really needs to know is whether or not he has all the capabilities required to successfully strike a specific set of targets. Can he put together a combination of units that is prepared to operate together to execute the wide variety of tasks necessary to execute the precision strike mission? Are the support capabilities outside his chain of command that are essential components of the precision strike system available and ready? There may be more than one way to accomplish each of the various tasks that comprise the precision strike system, but in the end, the joint force commander must have available a ready capability for each of those tasks or be prepared to cope with the risk associated with not having a fully ready capability. Where any capability is degraded, the joint force commander will want to be able to assess the effect on the overall output of the precision strike system.

The presentation shows the tasks in two different views: first in terms of the simple task hierarchy and second with notional units identified for each task. Obviously, the example is scoped down a great deal from reality, using only a limited portion of potential assets. We make no claim that this presentation is a complete representation of the entire task chain that actually makes up the precision strike system. It nevertheless

shows the detailed information necessary to accurately depict the "system" and provides a good illustration of the complexity, both in depth and in breadth, of any task "deconstruction" effort.[1]

The ability to perform precision strike tasks presupposes certain basic tasks have previously been performed or can be performed on an ongoing basis during operations. The services will need to have procured the necessary force structure. OSD will need to have insured the interoperability of the various service forces. The service forces will need to have accomplished both core competency training and joint force training. Various force providers, both service and joint, will have had to deploy the necessary forces, and the joint force commander will need to have assembled them in theater. The services and various defense agencies will need to provide sustainment of the operational forces on a continuing basis. Ultimately, no precision strike mission can be carried out if the organizations responsible for performing these various prerequisite tasks are not ready to provide the associated capability. However, for the purposes of this analysis, we will look only at those operational tasks directly related to the conduct of precision strike by units already deployed. We will also ignore, for the moment, the sustainment task, choosing to view that as a function of a separate system—the sustainment system (detailed in Appendix F).

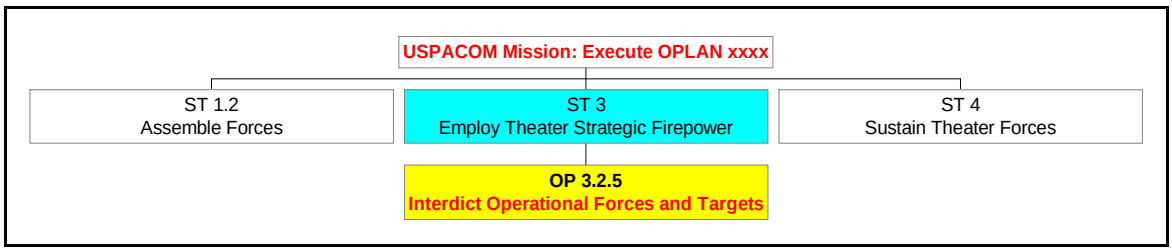

Figure E-1. MET #2

1 We used the task wordings (and numbering) found in the current versions of the UJTL and the service task lists. In the process of "deconstructing" the tasks involved in the Precision Strike System, we found several areas where these lists need to be modified to make them more useful to the readiness reporting community. See Chapter IX for more details on these recommendations.

In assessing readiness, there are two separate ways to view the precision strike system. The first, and most basic, way is from the perspective of mission essential tasks. There are many tasks that can be identified for operations as complex as precision strike. However, there are certain tasks that represent the summation of numerous basic and subordinate tasks and that are essential to successful accomplishment of the mission. These tasks can be arranged in a hierarchical view.

Once the essential tasks have been defined, organizations that have the capabilities to perform the tasks can be associated with each task. It should be emphasized that what is important is the task output, not how or by whom the task is accomplished. Therefore, it is quite possible that a variety of units from different services may be able to provide the required capability. Having identified the organizations with the requisite capabilities, it will then be possible to depict a unit view of readiness.

Task View

The specific task we are analyzing (Conduct Precision Strike) is best described in the current Universal Joint Task List (UJTL) using the Operational Task 3.2.5 "Interdict Operational Forces and Targets." For any precision strike mission, there will be the four essential component tasks as depicted here: obtaining target intelligence (both before and after the strike), exercising command and control over the strike force, actually conducting the strike, and providing protection for the strike force throughout the mission. Each of these component tasks contains its own hierarchy of subordinate tasks.

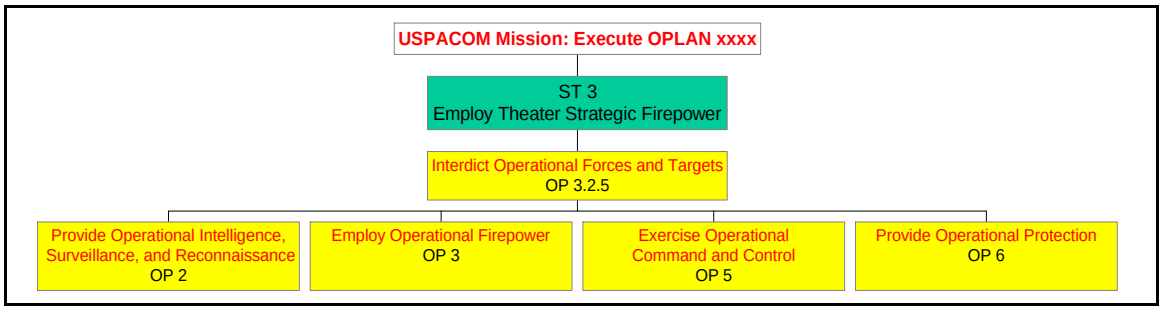

Figure E-2. Subordinate METs for Task OP 3.2.5

Prior to conducting a strike, it is necessary to select targets that are either of immediate tactical importance or that will contribute directly to the long-term success of the conflict. Targets in this latter category are referred to as being related to the enemy's centers of gravity. Regardless of the nature of the target, there will be numerous ways, strategic or tactical, for gaining intelligence about it. The readiness of those various capabilities will be of interest to the commander. This is especially true in those cases where intelligence is being provided by national or other out-of-theater intelligence organizations, but where those organizations rely on information provided by in-theater forces under the control of the combatant commander. As this slide also depicts, the gathering of intelligence through surveillance and reconnaissance is only one step in the overall process. Analyzing, interpreting, evaluating, and integrating large amounts of information will be required in order to produce actual intelligence that is of value to the commander. The intelligence analysis process requires a specific set of capabilities in the same manner as does the information collection process.

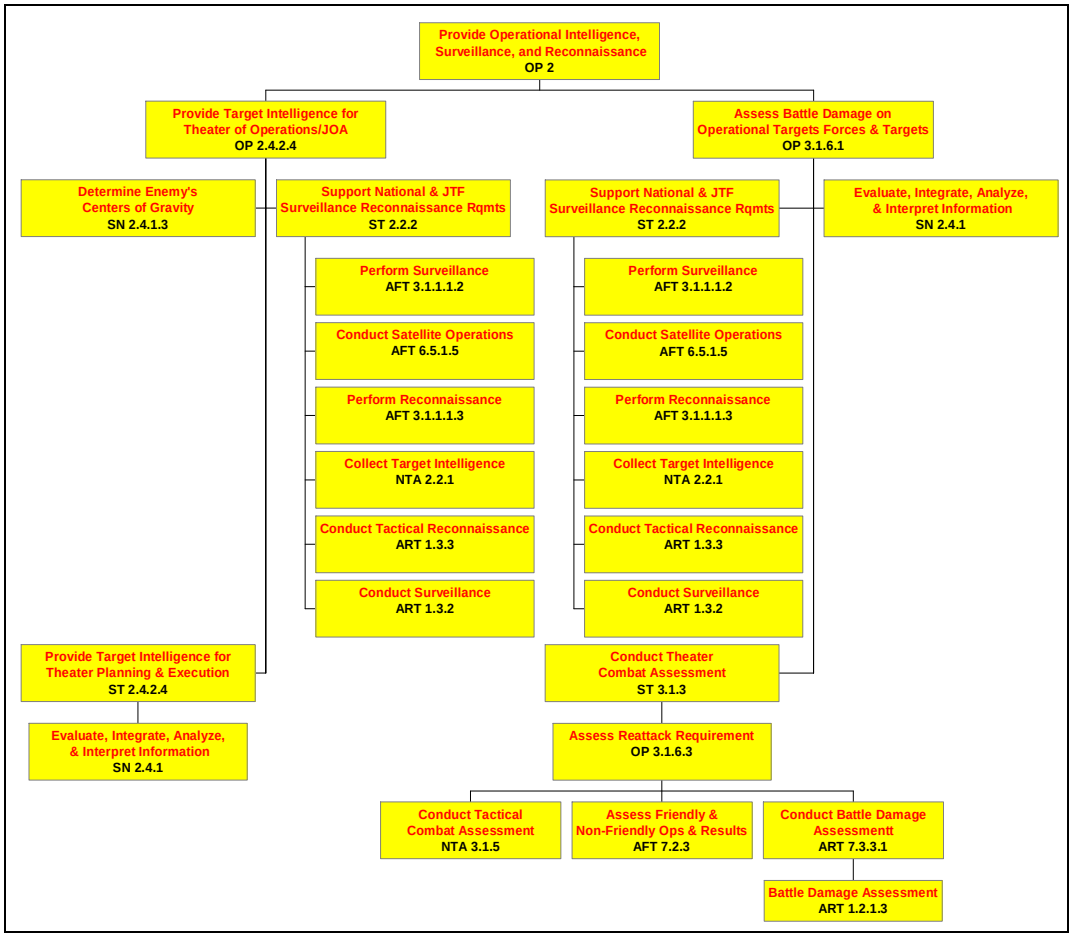

Figure E-3. Subordinate METs for task OP 2

The right side of Figure E-3 shows the intelligence capabilities the commander requires once the strike has been carried out. He wants to know what the effect of the strike was, so that he can factor that into decisions about follow-on operations, including, if necessary, restriking a target. Making a battle damage assessment requires many of the same intelligence gathering and analysis capabilities that are needed in planning the initial strike. However, whereas initial target development may take place over an extended period of time, battle damage assessment is generally desired as rapidly as possible upon conclusion of the strike. For this reason, the capabilities needed for developing a battle damage assessment may be somewhat different than those employed in initial target development. The basic tasks may remain the same, but the conditions and standards for the tasks may change.

Actual conduct of a strike requires development of the targets at the tactical level. The units carrying out the strike must do their own planning and coordination and select the appropriate delivery vehicles and weapons for each target. The slide below shows that the commander may choose either air capabilities or surface (land or sea) capabilities, or a combination of both, to conduct the actual strike. This slide could be expanded in that the commander might also have the option of employing the capabilities of SOF units to conduct direct attack on specific targets.

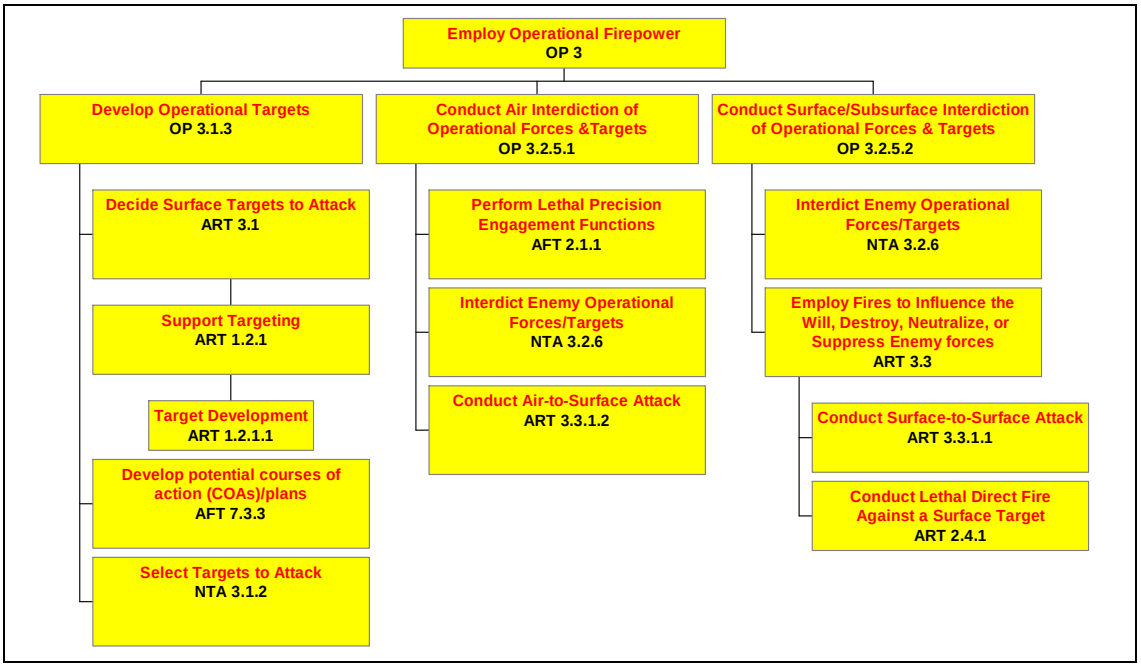

Figure E-4. Subordinate METs for task OP 3

Regardless of the sophistication of the strike, the commander and his subordinates will have to exercise all the traditional elements of command and control. Planning will include everything from the commander's campaign strategy and operations order to the air component commander's air tasking order to the creation of mission data sets for Tomahawk cruise missiles. All of the planning and decision making will require the follow-on communications associated with delivering plans and operations orders, keeping all levels of the chain of command current with regard to the developing situation, and transmitting and relaying the tactical orders and information associated with the actual strike missions, even while they are in progress.

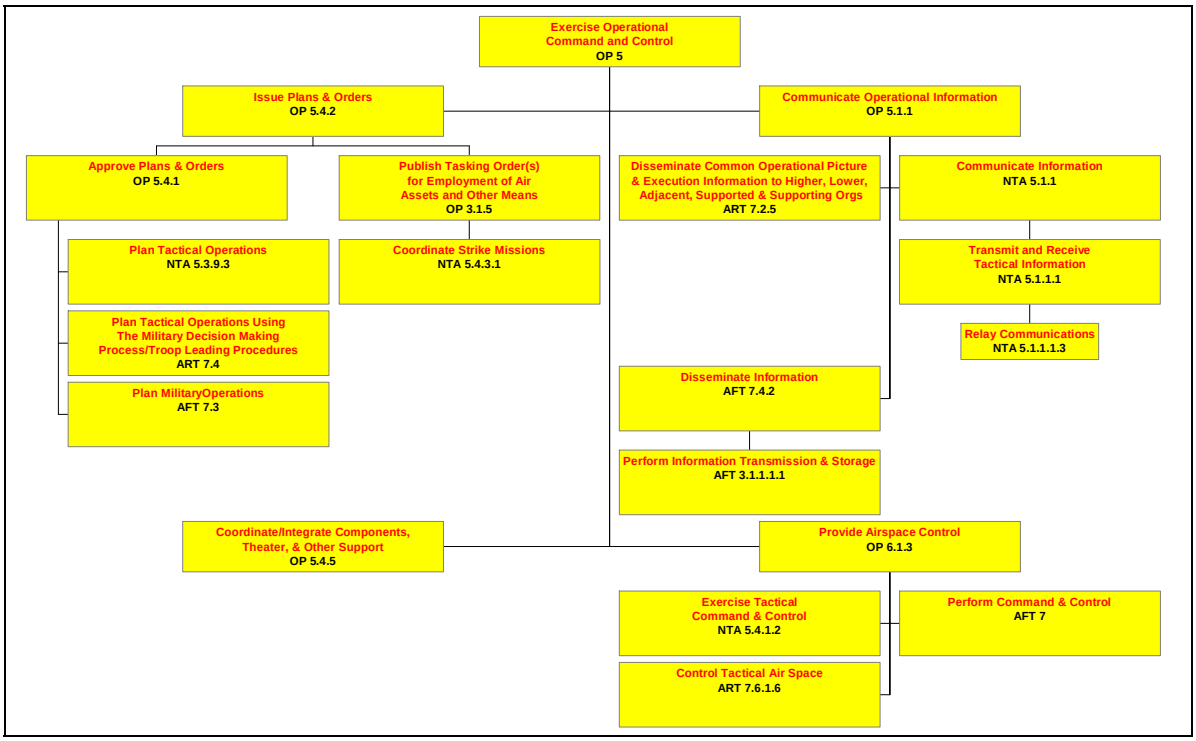

Figure E-5. Subordinate METs for task OP 5

Protecting friendly forces is an essential part of any mission, and the protection of friendly air assets, in particular, requires a diverse set of capabilities. If the strike involves the employment of air assets, then the commander will likely want to have the capabilities needed to suppress enemy air defenses, both prior to and during the actual strike mission. The capabilities he will desire will be dependent upon the defensive capabilities the enemy possesses. In addition to protecting his strike forces from the enemy, the commander will want the capability to protect against "blue-on-blue" engagements and losses due to friendly fire. He will also want the capability to insure

that enemy forces that have become intermingled with the strike force do not endanger friendly forces.

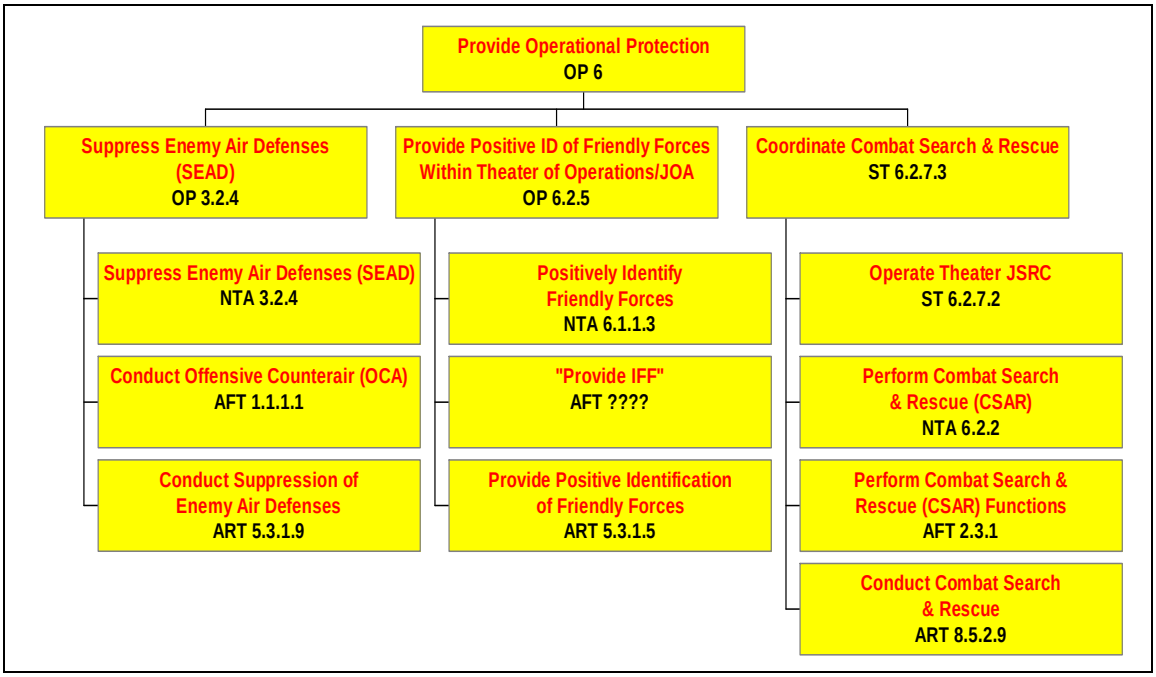

Figure E-6. Subordinate METs for task OP 6

It is interesting to note in this context the fact that, while the Navy and Army tactical task lists include specific tasks for IFF, the current Air Force tactical task list does not. A single universal task list that includes the tasks, at all levels, that the joint force commander needs to accomplish would be one way to remedy this and similar shortcomings of the existing UJTL methodology. A single task list would also eliminate the requirement to identify tasks multiple times, as on this slide, simply because they must be accomplished by organizations from different Services. The subject of a complete universal joint task list is discussed in more detail in Chapter IX.

Unit View

Having defined a number of the basic capabilities required to carry out any precision strike mission, we have associated nominal units with those capabilities, assuming the strike mission will be carried out in Northeast Asia. The organizations identified in the following slides are notional and are not tied to any existing OPLAN. Neither are they intended to be an exhaustive list of organizations that can perform any

particular task. They are simply included to provide the reader examples of the types of organizations that may have the capabilities required and to illustrate how METs and organizations can be matched up for readiness reporting purposes.

We placed the precision strike mission in the context of a Commander, US Pacific Command OPLAN, executed by a Joint Task Force under the command of Commander, III Marine Expeditionary Force (Figure E-7). These tasks would be the same for any organization acting as the Joint Task Force command element.

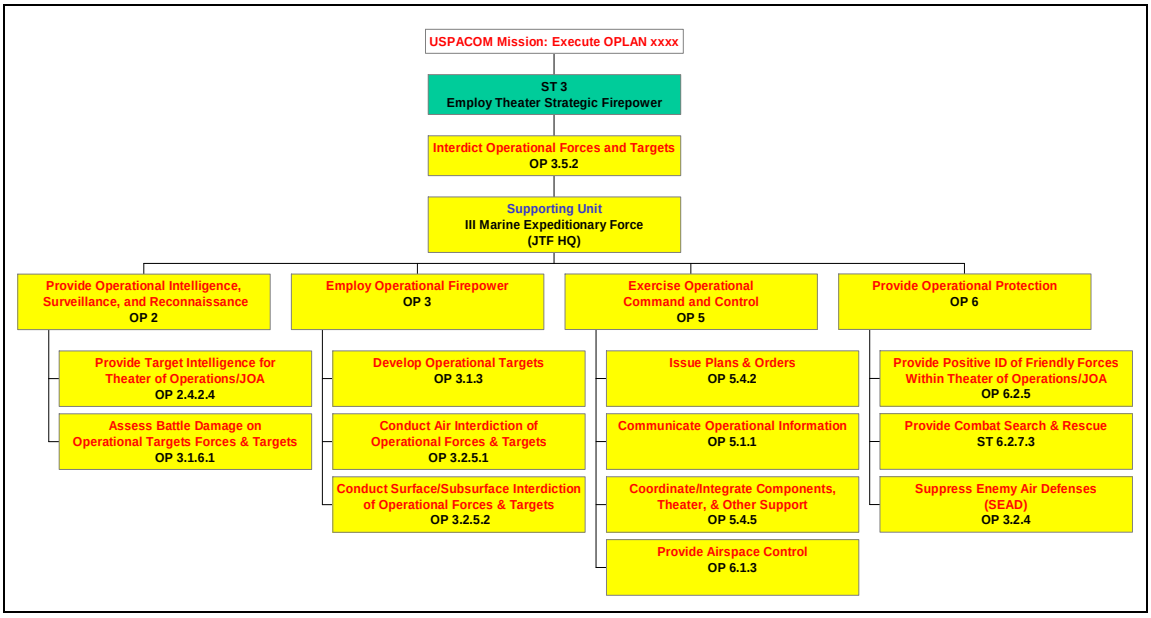

Figure E-7. Supporting units for task OP 3.2.5

Figure E-8 depicts the wide range of organizations required to provide the JTF Commander the capabilities he needs to select the appropriate targets for a precision strike mission. Note that the JTF Commander requires not only the capabilities of the theater commander's intelligence staff and those of joint intelligence centers, but he will also likely need the collection and analysis capabilities of national intelligence organizations such as CIA and DIA, as well as the intelligence gathering capabilities of tactical level units such as Air Force reconnaissance squadrons, Army intelligence battalions, and Navy fighter squadrons or UAV detachments.

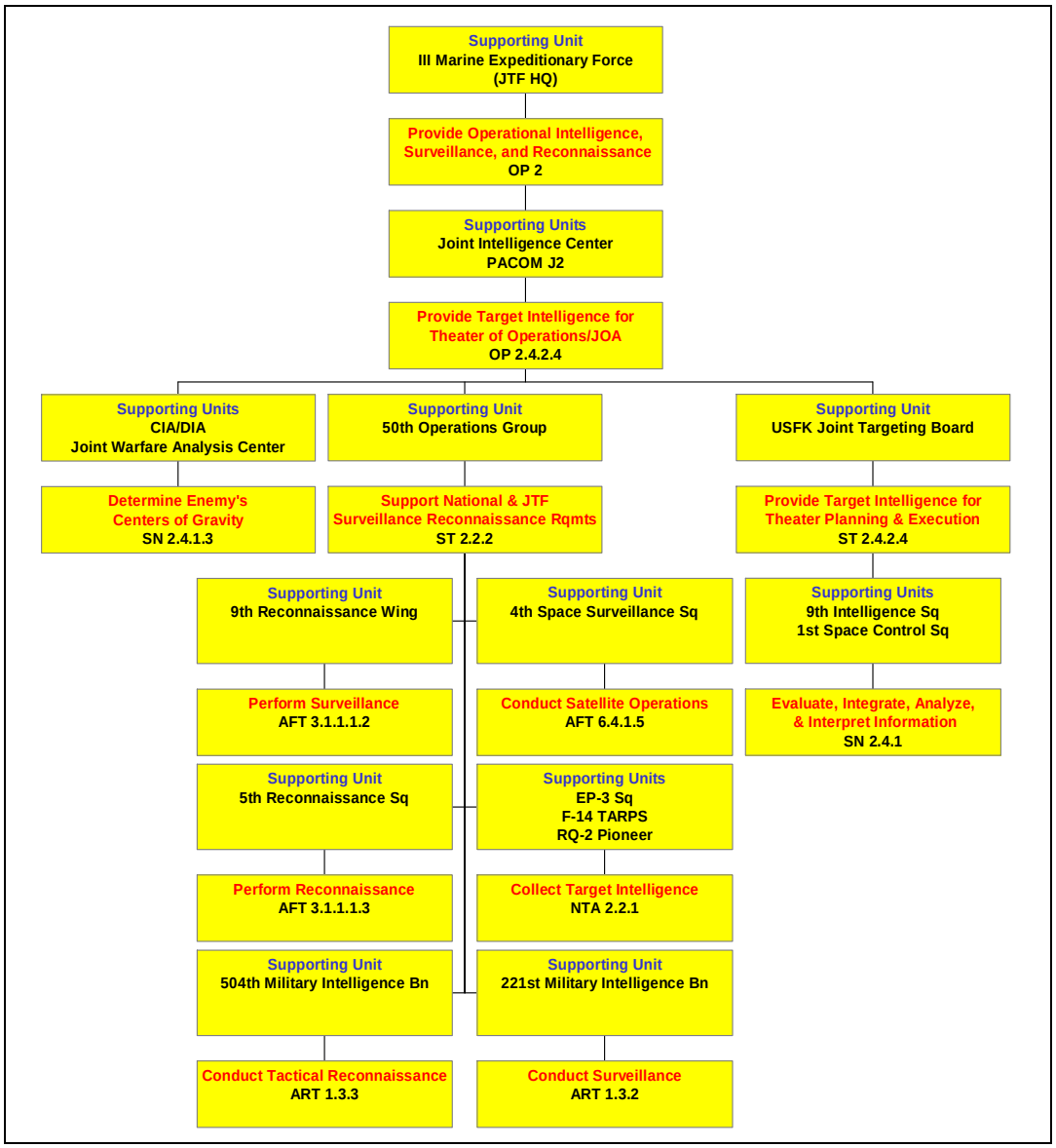

Figure E-8. Supporting units for task OP 2

Post-strike battle damage assessment (BDA) will require many of the same capabilities as did pre-strike intelligence efforts, and thus many of the units involved will be identical. Of particular value will be the capability of units involved in the strikes or in the immediate vicinity of the strikes to gather information that can be analyzed either in theater or by national level intelligence organizations. While the METs assigned to the various organizations may be the same for both the pre-strike and the post-strike BDA situations, it is likely that the conditions and standards associated with each MET will be different for the two situations. Therefore, the readiness level required of the units to perform the METS in the two situations may be different.

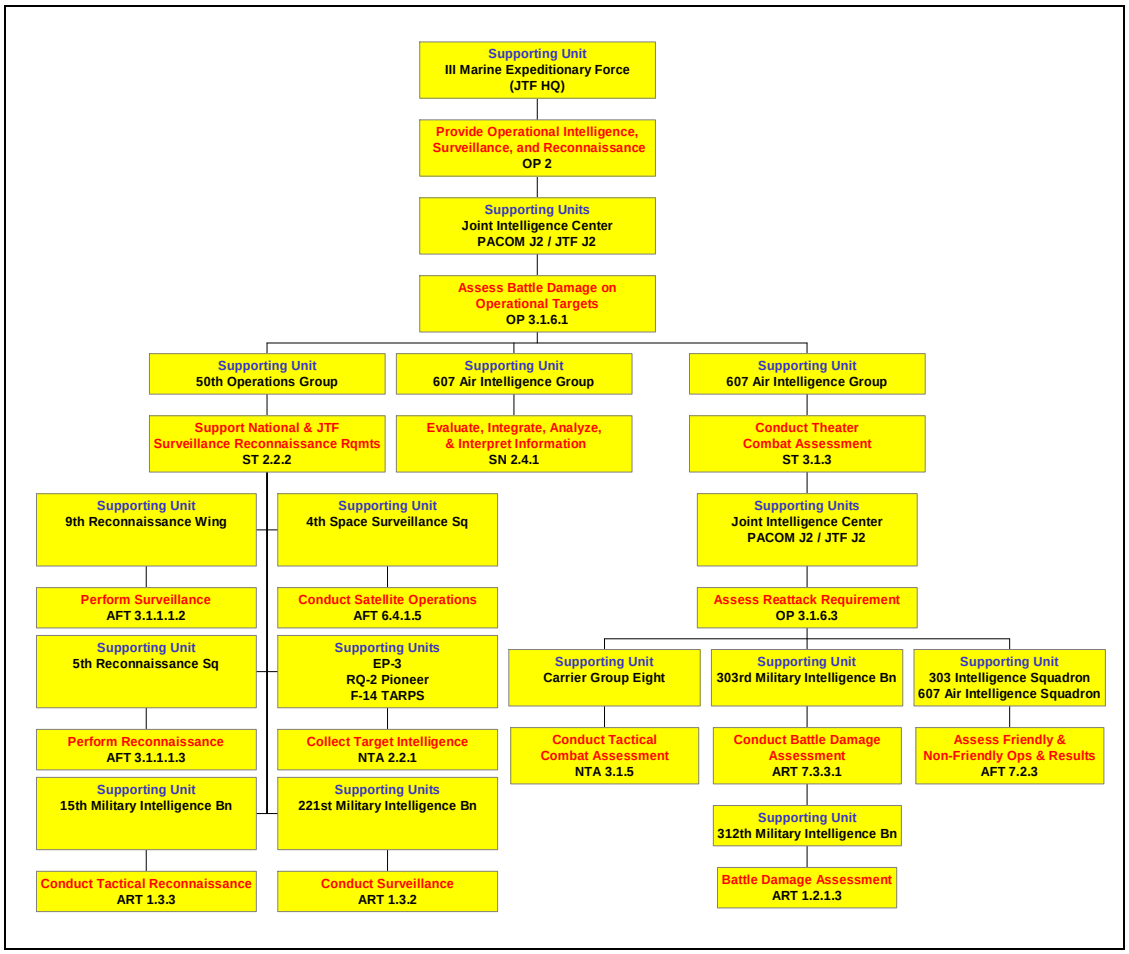

Figure E-9. Supporting units for task OP 2 (cont.)

There are various organizations at each level of the chain of command that must be ready to provide the capabilities necessary to select and coordinate targets to be assigned to the various strike units. The JFACC requires the capability resident in his staff to conduct planning and to make recommendations to the JTF commander and to then execute the decisions of the commander. The subordinate tactical units of each of the Services require the capability to match weapon systems, or combinations of systems, to specific targets.

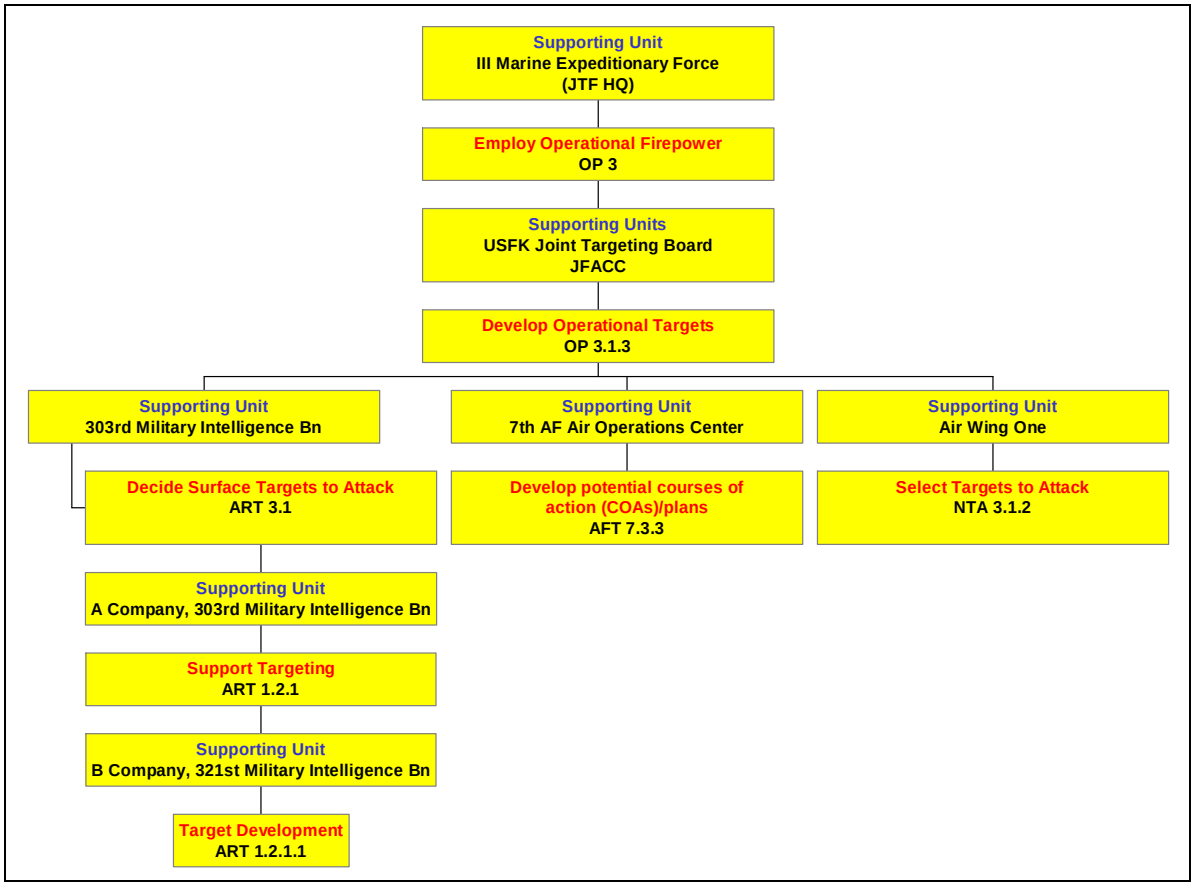

Figure E-10. Supporting units for task OP 3

The next two figures illustrate the variety of organizations that may be called upon to carry out the actual strike mission.

Note that, when only air assets perform the task, the JTF Commander and JFACC can call upon units of three services to provide the needed capability. The selection made by the commanders will likely depend on the readiness of those various units to provide the required capability—the readiness of each unit being measured against the standards and conditions of the specific mission.

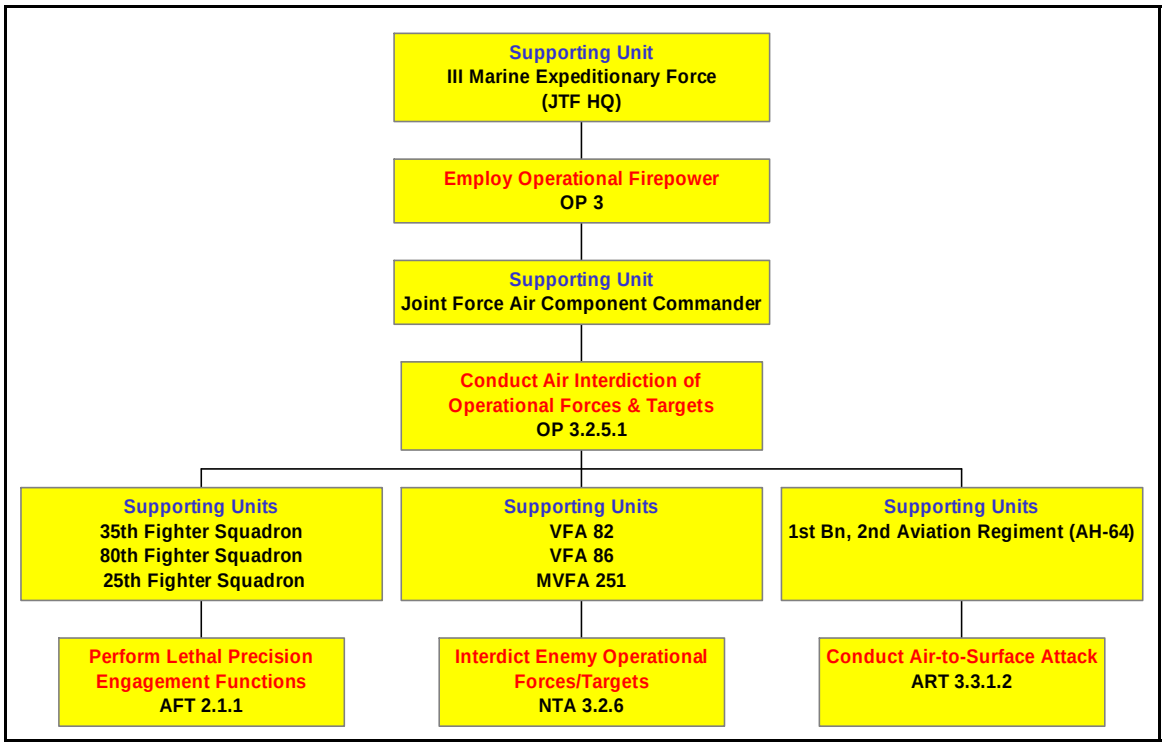

Figure E-11. Supporting units for task OP 3 (air interdiction)

The strike task could also be assigned to surface units—Navy Tomahawk-capable ships and submarines and Army artillery units. Again, the decision of the JTF commander as to which capability to employ will depend upon the readiness of each of the units depicted with regard to the standards and conditions demanded by the target set. This emphasizes the point that readiness can be more than just a general term that reflects the overall capabilities of individual military units and supporting organizations. Readiness is also a measure of the ability of a system—a group of organizations—to perform a specific task, under a specific set of conditions, achieving a prescribed output. The range of weapons, their effectiveness against particular types of targets, the effects of environment and the weather, and the availability of over flight rights are some of the factors affecting readiness and determining whether given units can provide the necessary capability in this particular case. A combatant commander is likely to be more interested in the readiness of the larger system to perform an operational task than in the readiness of any particular unit.

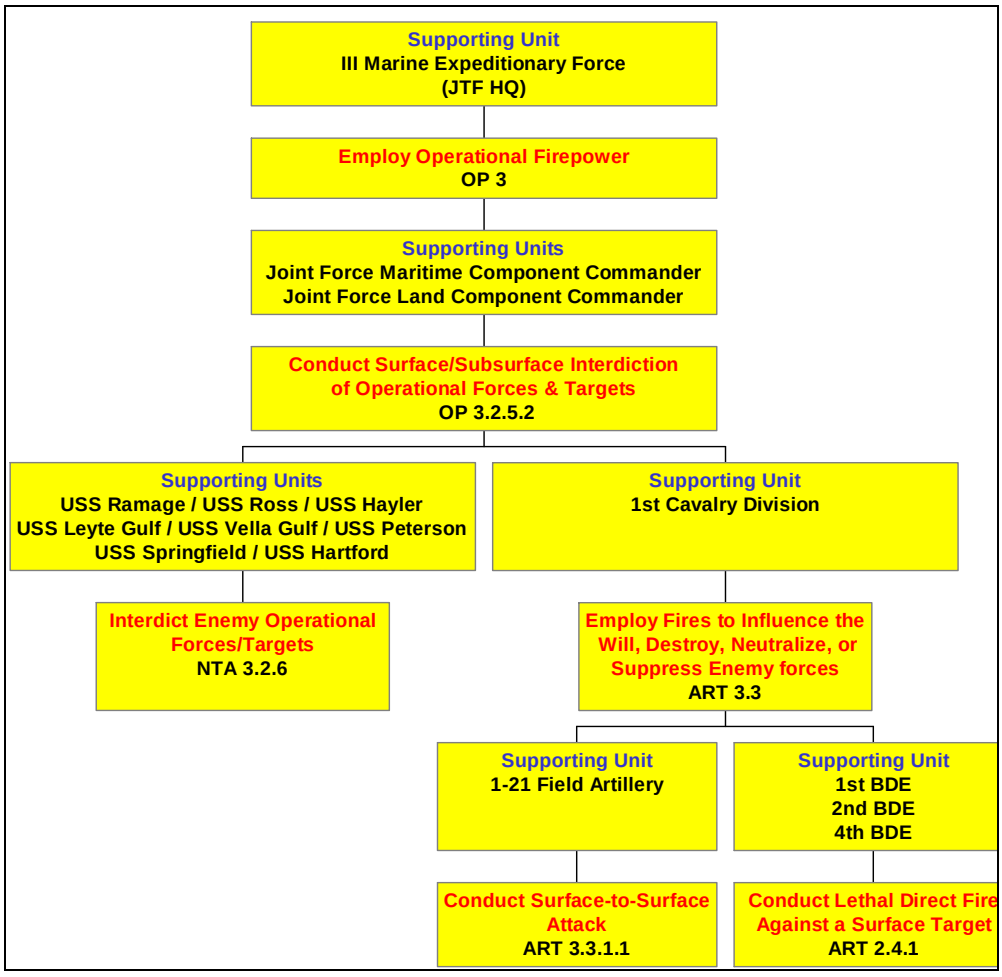

Figure E-12. Supporting units for task OP 3 (surface/sub-surface interdiction)

The command and control system is an obvious and essential component of the precision strike "system of systems." Both in terms of planning and communications, the constant interconnectedness of all levels of the chain of command is required. The capability to plan and coordinate operations is required by the JTF commander's staff and other senior staffs, as well as at the tactical level by Air Force air operations centers, Army division staffs, and Navy carrier battle group staffs. This slide also depicts the fact that for a Tomahawk strike, the JTF commander requires the capability resident in the cruise missile support activities—organizations that are outside the theater and outside the JTF commander's chain of command. In terms of communications, this slide shows how the JTF commander's capability to exercise command and control requires units at every level to have specific communication capabilities, including, for purposes of providing tactical data to forward units, the ability to relay communications automatically.

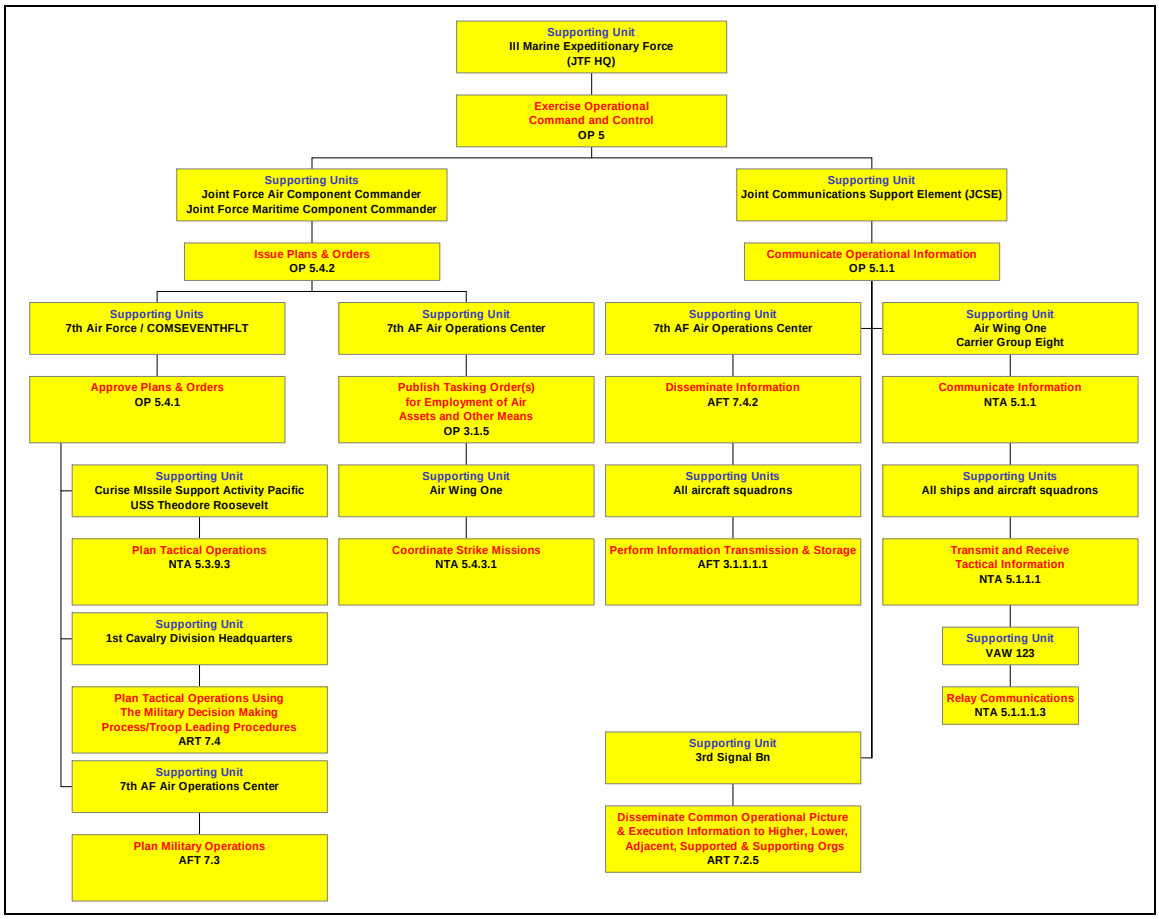

Figure E-12. Supporting units for task OP 5

If the precision strike mission is to be accomplished by air interdiction, then the JFACC must have the capability to coordinate and integrate the strike capabilities of all the services that are involved. This includes Army, Navy, and Air Force units in theater, as well as aircraft based out of theater that have been assigned a role in the mission. Additionally, in this scenario, the 7th Air Force Air Operations Center must provide the capability to control the air space; and tactical units, including ships, Navy airborne early warning and command and control aircraft, Air Force air control squadrons, and Army air defense artillery brigades must have the capability, using voice and data, to provide tactical air control in their assigned sectors.

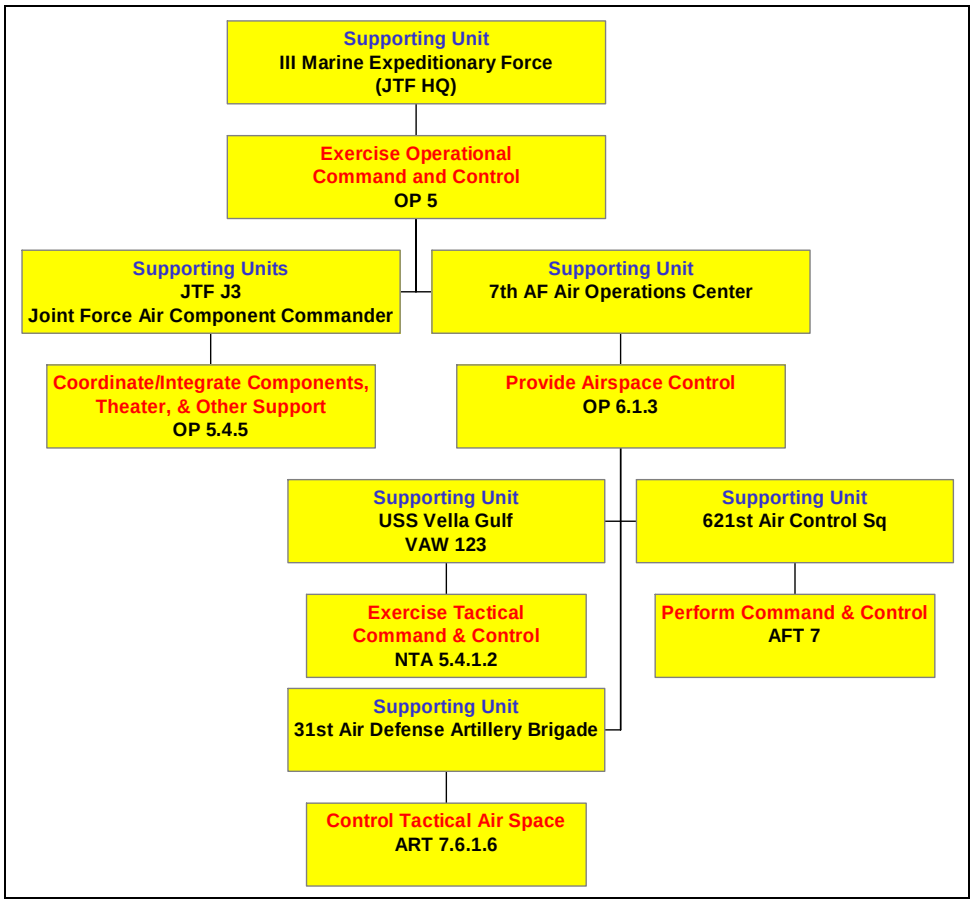

Figure E-13. Supporting units for task OP 6

The final figure depicts the large number of units required to provide the wide range of capabilities needed to support the actual strike forces. The capability to suppress enemy air defenses, which can be lethal or non-lethal, may be provided by Air Force fighter squadrons, Army field artillery, or Navy EA-6B squadrons. Again, what is

important is not the means, but the capability to accomplish the specifics of the task—provide a particular output, under specific conditions, to achieve an established standard.

In the area of force protection, it is particularly important that every unit participating in the strike mission have the capability to function within the IFF system. While the air operations center may be coordinating responses to force identification issues, ships, aircraft, and army ground units all require the capability to interrogate other units and respond to IFF challenges. [As pointed out earlier, the Air Force does not specifically identify the "IFF task" in its task list, although obviously, combat units must perform the task in some manner.]

Finally, the joint force commander requires the capability to recover pilots who go down, for whatever reason, in the course of the strike mission. The capability to plan and provide command and control for a combat search and rescue (CSAR) mission is resident in the joint search and rescue center. The capability to execute the actual CSAR mission resides in Air Force rescue squadrons, Navy carrier-based helicopter squadrons, and Army SOF units.

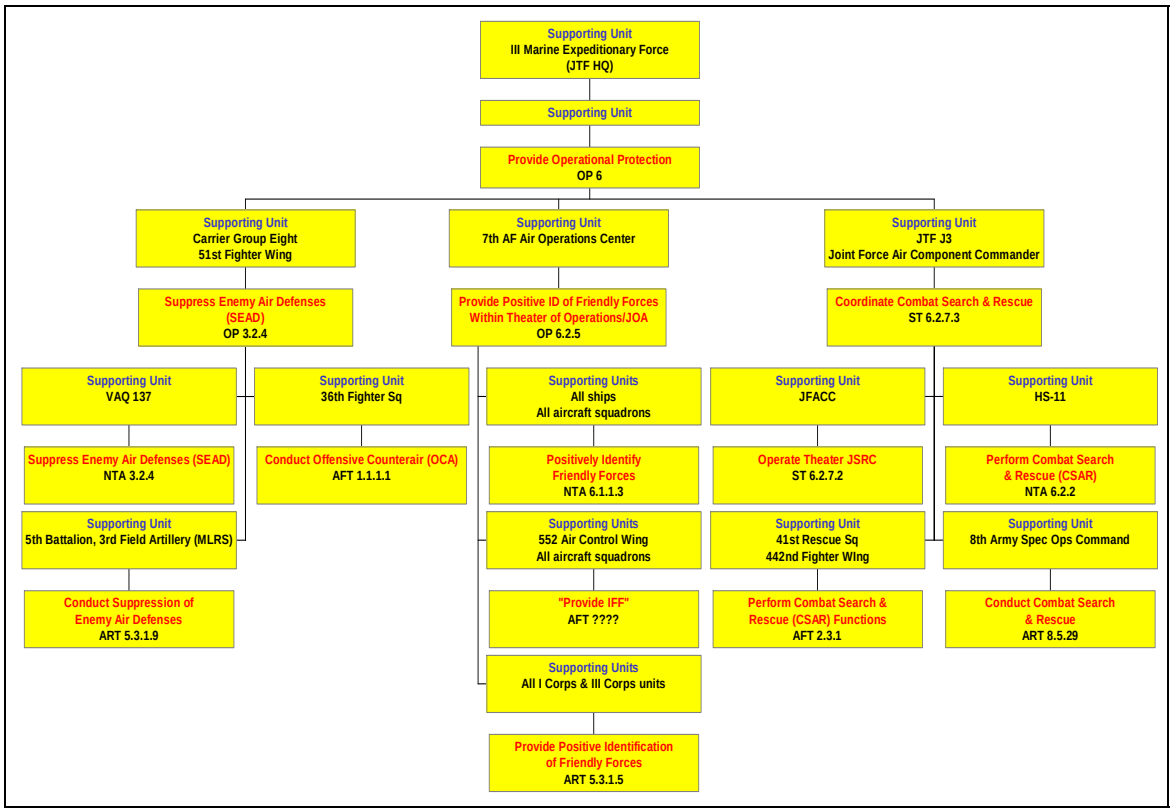

Figure E-14. Supporting units for task OP 6 (cont.)

Appendix F
OPLAN TO TASK DECONSTRUCTION
THE LOGISTICS SYSTEM

Appendix F
OPLAN TO TASK DECONSTRUCTION, THE LOGISTICS SYSTEM

Appendices D and E demonstrated how system readiness could be analyzed, using the Defense Transportation System and the Precision Strike System respectively to model the methodology. This appendix takes a different track. Rather than developing task trees based on the UJTL and the service task lists in a simplified scenario to illustrate a generic model of the Logistics System, we used Annex 4 of an existing OPLAN to develop the task trees that appear in the figures of this appendix.[1]

The presentation shows the tasks in terms of the task hierarchy. We make no claim that this presentation is a complete representation of the entire OPLAN to task deconstruction of Annex 4. To do a full deconstruction requires research into the supporting OPLANS written by the various components and into the actual SOPs and other guidance documents of all the DoD organizations involved in logistics. Also, because the majority of the tasks explicitly enumerated in the OPLAN are assigned either to the combatant commander staff or to the components of the sub-unified command, we have not provided an organizational view. A meaningful organizational view would require the addition of tasks delineated in the supporting plans developed by supporting combatant commanders, services, and defense agencies. The following figures nevertheless show the detailed information necessary to accurately depict the "logistics system" and provide a good illustration of the complexity, both in depth and in breadth, of any task "deconstruction" effort.

As we proceeded with the project of deconstructing the OPLAN annexes, we found several things of interest:

- Some tasks were described in very general terms.

[1] The tasks were extracted directly from the OPLAN annexes. We used a good deal of subjectivity in identifying the total list of tasks, since the majority of these were not specifically listed in the documents under the heading of "task." Nevertheless, in our judgment they are the explicitly stated and directly implied METs of Annex 4 to the OPLAN.

- Some tasks were described in excruciating detail—almost a check sheet listing.
- Some tasks, required by doctrine, were not discussed at all or were given superficial treatment at best.
- None of the tasks use terminology from the UJTL or the service task lists. The use of one set of tasks in building OPLANS and another set in planning and assessing training should come to a natural end as ESORTS is developed.
- Tasks take on significance only in the context of a DoD that is viewed as a system of systems. Logistic tasks are of vital importance, but logistics is not an end in itself. Rather, the logistics system comprises the key tasks necessary to support the functioning of the deployment, employment, and sustainment systems.

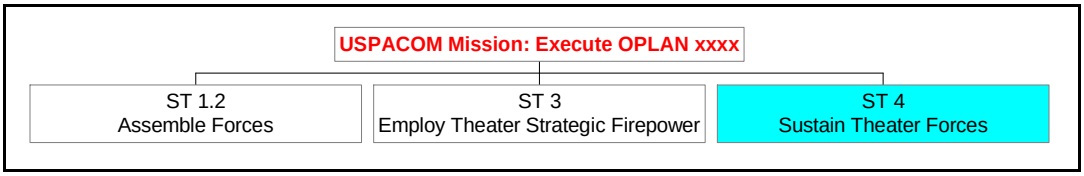

Figure F-1. MET #3

Figure F-1 shows the context for the tasks found in the logistics annexes that are reflected in the remainder of the figures in this appendix. The annexes themselves specified a few tasks that are directly related to deploying (assembling) the force.[2] These tasks were specifically excluded from the following figures, as we elected to focus the task deconstruction on the primary MET of sustaining the force.

In order to view the OPLAN tasks in a logical manner, we needed to set them in an appropriate framework. We used the definition of sustainment as the basis for our framework. According to the DoD Dictionary (DoDD), sustainment is "The provision of personnel, logistic, and other support required to maintain and prolong operations or combat until successful accomplishment or revision of the mission or of the national objective."[3] Based on this definition, the task of "sustainment" consists of three primary sub-tasks—"Provide Personnel;" "Provide Logistic Support;" "Provide Other Support." We do not pursue two of these sub-tasks. One, the task "Providing Personnel" is a

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2 These include two of the three explicitly stated missions of PACOM—1) Direct/coordinate actions to support strategic deployment of forces to AOR; and 2) Intensively manage TPFDD flow.

3 Department of Defense Dictionary of Military and Associated Terms (JP 1-02), 12 April 2001, p. 436.

service Title 10 function and outside the scope of this OPLAN example. Two, we have been unable to determine what the task of "Providing Other Support" actually means, and therefore do not deal with it in this example.

According to the DoDD, logistic support "encompasses the logistic services, material, and transportation required to support the continental United States-based and worldwide-deployed forces."[4] We found this definition not very useful for deriving tasks. Therefore, we turned to the definition of "logistics."

Logistics is "The science of planning and carrying out the movement and maintenance of forces. In its most comprehensive sense, those aspects of military operations which deal with: a. design and development, acquisition, storage, movement, distribution, maintenance, evacuation, and disposition of material; b. movement, evacuation, and hospitalization of personnel; c. acquisition or construction, maintenance, operation, and disposition of facilities; and d. acquisition or furnishing of services."[5]

The DoDD definition of logistics was not completely helpful either in allowing us to catalog the tasks extracted from the OPLAN, primarily because of the way in which it interrelates the supply and maintenance functions and because it fails to make transportation the clearly separate function that it is.[6] We therefore used the six broad logistic functions and their accompanying descriptions found in the joint logistics doctrine manual as the basis for our framework.[7]

The task tree depicted in Figure F-2 shows this framework. It is based on the definition of sustainment and the logistic support functional areas identified in Joint Pub 4-0. Although these "tasks" are not directly extracted from the PACOM and UNC OPLAN Logistics Annexes, we begin with them to help organize the tasks specified and directly implied in the actual OPLAN.

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4 Ibid. p. 264.

5 Ibid. p. 264.

6 The circular and varying definitions found in the joint publications regarding the subject of logistics provide another example of the problem of linguistic non-interoperability that exists in DoD as we discussed in Chapter IV.

7 Joint Publication 4-0, Doctrine for Logistic Support of Joint Operations, April 6, 2000, pp. I-2 thru I-3. Curiously, in another example of linguistic non-interoperability, according to JP 4-0, "The Marine Corps categorizes laundry and shower as "engineering" and light textile repair as "maintenance."

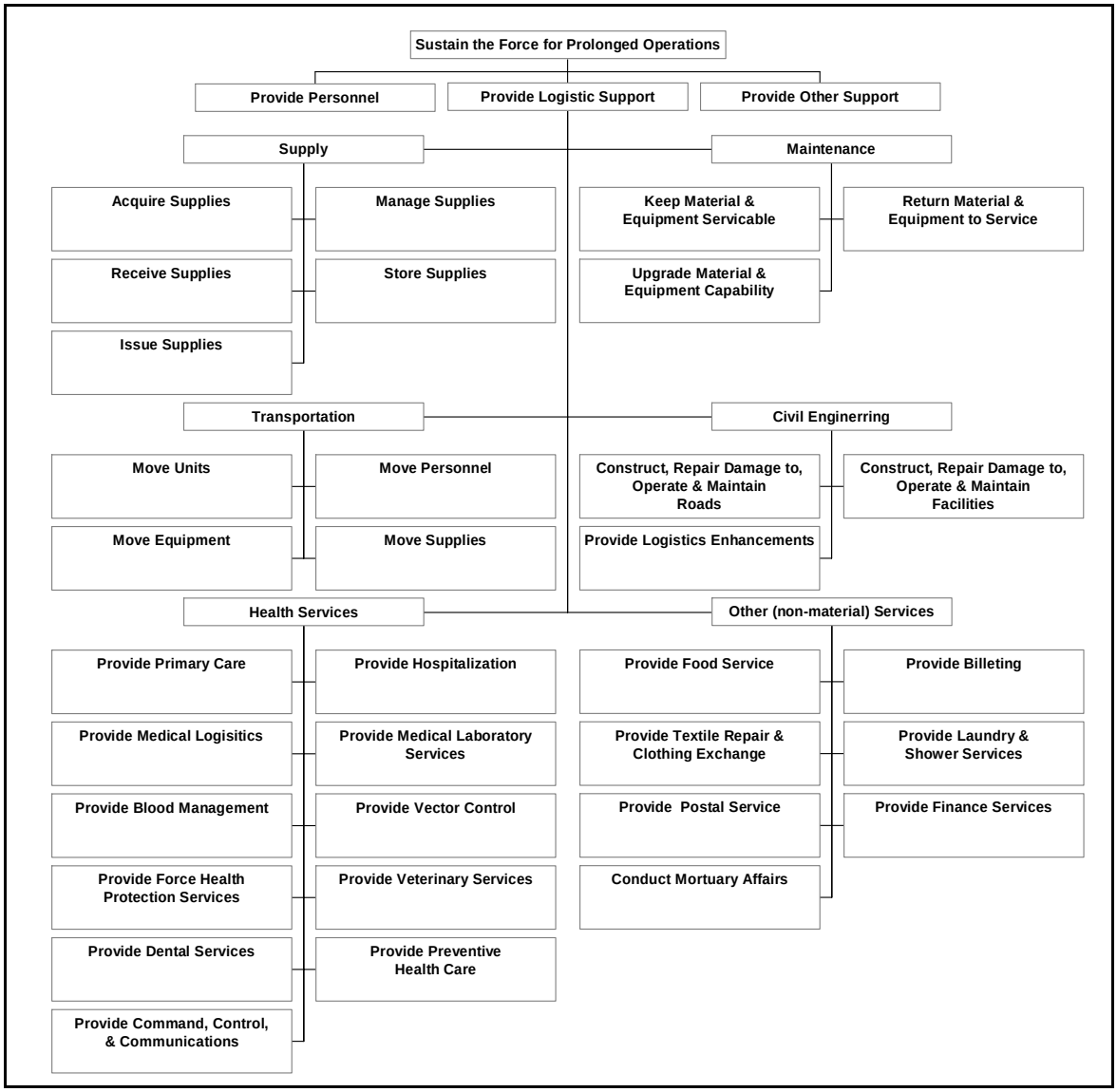

Figure F-2. Sustainment Task Framework

The following figures show the full deconstruction of the OPLAN by building on this tree. The white boxes are the IDA framework. The text in the yellow (gray) boxes are the "tasks" derived from the OPLAN annexes.

Pre-C-Day

Figures F-3 through F-9 depict a number of standard planning or preparatory functions carried out by generally higher-level staffs.[8] These are all found in the OPLAN annexes.

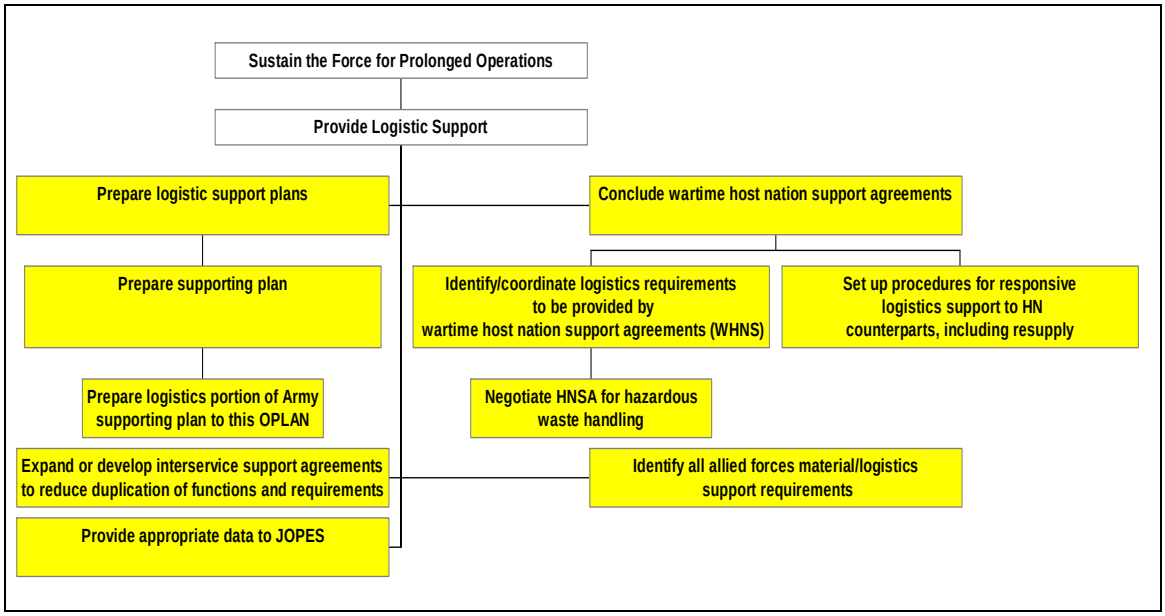

Figure F-3. General Tasks

8 The annexes contain no "planning" tasks related to "Health Services." OPLANS do have a separate "medical" annex. However, Health Services as a function of logistics are defined in Joint Pub 4-0 to include, in addition to patient movement and hospitalization, such tasks as primary care, lab services, blood management, vector control, and dental services.

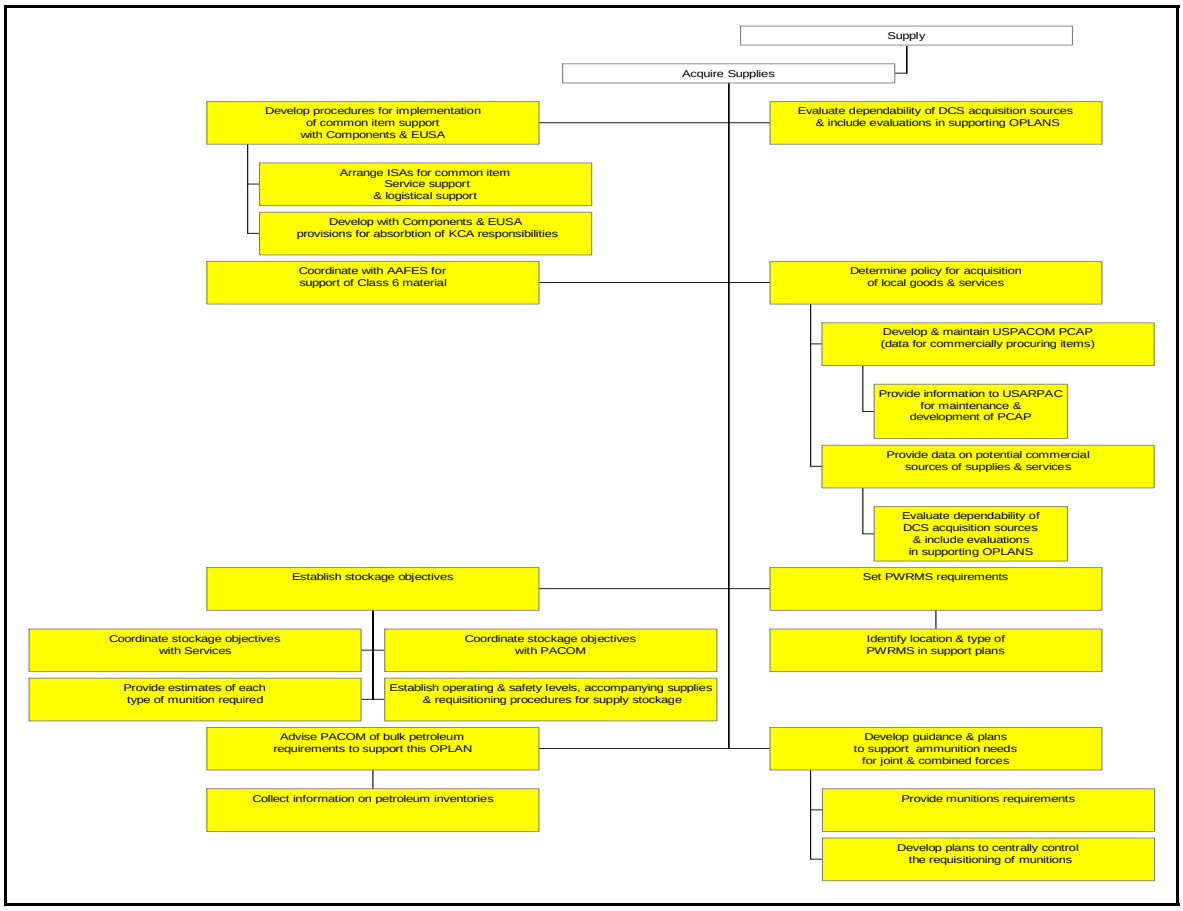

Figure F-4. Planning Supply Acquisition

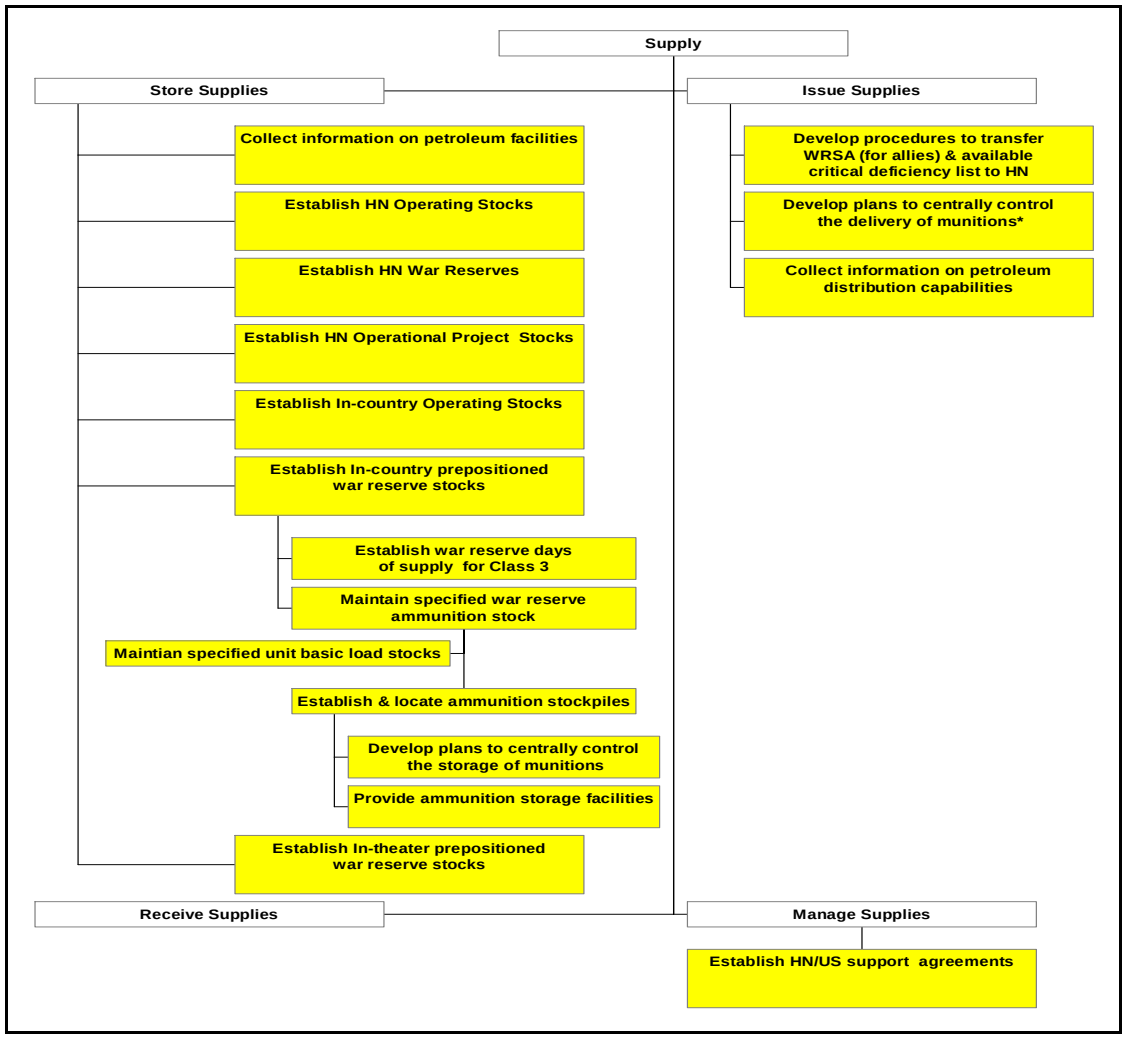

Figure F-5. Planning Supply Storage & Issuance

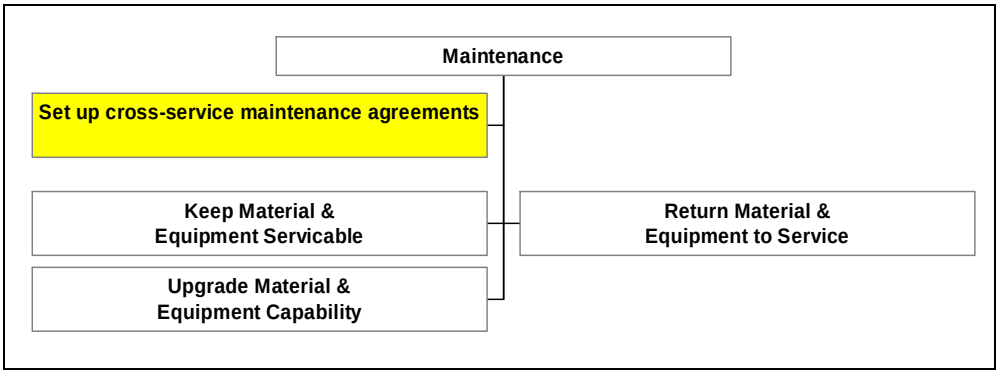

Figure F-6. Planning Maintenance Functions

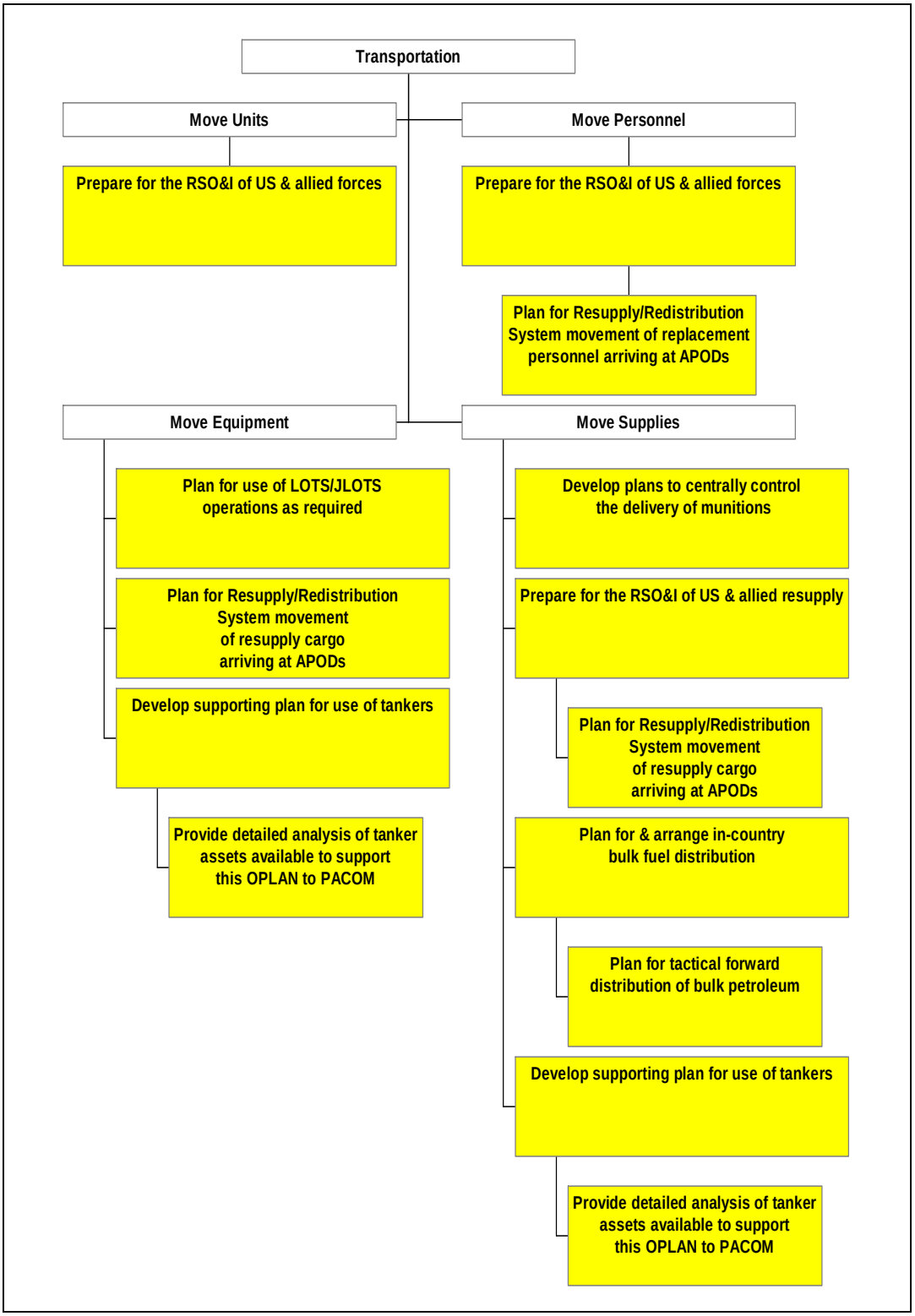

Figure F-7. Planning the Movement of Units, Personnel, Equipment, & Supplies

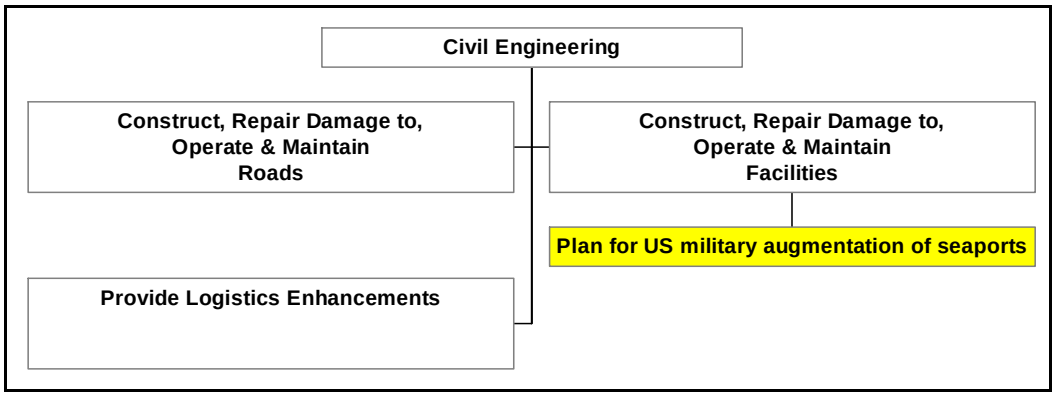

Figure F-8. Planning Civil Engineering Projects

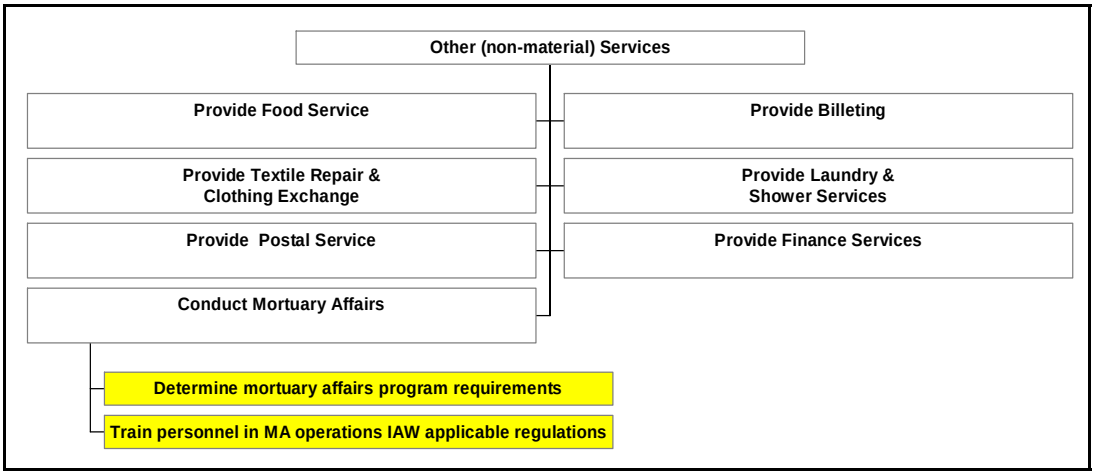

Figure F-9. Planning for Other (Non-Material) Services

The wording in the Figures F-3 through F-9 indicate what tasks need to be accomplished, but it is not always put into task language. Examining the wording in the above figures, one can see that the actual tasks include and can be summarized as:

Preparing plans

Identifying Requirements

Concluding agreements

Establishing Policies and Procedures

Assigning responsibilities

Identifying and evaluating potential sources of outside assistance

Collecting data

Conducting analysis

Providing data to other organizations

Establishing Objectives

Establishing prewar stock levels

Acquiring specific facilities

Preparing for RSO&I

Conducting specific training

The modifying words, which greatly expand the number of tasks in the figures, are actually the conditions and standards associated with the basic tasks listed above. The process of coordinating the closely related functions of planning, training, operations, and readiness assessment would be enhanced significantly by the consolidation and standardization of the task language employed in OPLANS and the UJTL.

A cursory review of the tasks reflected on the Pre-C-Day figures will show that there are many redundant tasks, that there are areas for which the task trees are clearly incomplete, and that there are legitimate logistic functions for which no tasks are prescribed. Were standardized task trees to be established, OPLANS would become far more complete, redundancies in tasking could be eliminated, commanders and senior leaders would have a much clearer basis for assessing their own preparedness, as well as the readiness of those tasked to support them, and the operating forces at all levels would have clearer guidance as to the capabilities they need to be prepared to deploy and the training they need to conduct.

To write an overarching OPLAN that describes fully the tasks that need to be performed, one would need to take into account those responsible for its execution (the commander and other senior leaders), those who will actually perform the tasks (various staffs and operators), and those who must support the plan (the many military and civilian support agencies). This can best be done by expressing explicitly "what" needs to be accomplished.

"What" can best be understood when it is expressed in terms of an output.

In the case of the first task here—"Planning," the task output would be expressed as "produce a plan." (Planning itself goes on continuously. To say that one has the capability to plan does not provide useful information. What is required is the capability

to produce an output of value at the time it is needed.) The resources required to produce that output will be determined by the exact nature of the task—the conditions and standards for the task. In the pre-C-Day context, it will require different resources to develop different plans, depending on the nature of the planning being done and the metrics used to determine what constitutes a satisfactory plan. Planning to build infrastructure is different from planning to provide POL or planning to meet transportation requirements. Those doing the planning will be particularly interested in having available the resources needed to accomplish the planning tasks assigned to them. The commander and other senior leaders will be interested in knowing the extent to which planning has been completed and the degree to which plans meet the established standards. Operators will depend on the readiness of planning to support their deployment of forces. Various support organizations will look to plans for specific guidance as to what they must be prepared to do at the time a plan is executed.

Thus, planning itself can be viewed as a capability, a task to be performed, and readiness to provide that capability is important at all levels. The plan itself is the measured output. The resources necessary to produce a plan (the people, equipment, and training) are the measured inputs that permit prediction of the capability to complete a plan under the conditions prescribed and to the standards (level of detail and thoroughness) prescribed.

Post-C-Day

The following figures include all six of the basic logistic functions described above and correspond to the figures shown above for pre-C-Day tasks. In some cases, the figures have been broken into component parts because of the number of tasks prescribed in the OPLAN and in order to add clarity. Additionally, we have demonstrated how a task tree would expand beyond an OPLAN, based on the requirements levied on subordinate or supporting commands and organizations. We have done this by expanding the task “provide munitions support” to include the navy’s requirement to ”provide Tomahawk resupply” to its ships and submarines. Tomahawk resupply tasks are shown in blue (dark gray) boxes.

The management functions shown in Figure F-10 are in addition to the six basic logistic functions. They cut across several or all of the logistic functions. The tasks delineated here reflect the importance of higher-level staff functions. Commanders need to be assured that adequate resources are available to provide them these capabilities, just

as they need to be assured that subordinate and supporting commands have the resources necessary to provide the more basic operational and logistic capabilities. The Tomahawk tasks indicated in this figure are examples of broad general management tasks that support a number of logistics requirements and that are specifically required to support the resupply of Tomahawk missiles for navy ships and submarines. The specific task to schedule and coordinate rearmament of Navy ships indicates the broader requirement to schedule the rearmament of all types of ships, both inport and underway, in the context of ongoing joint combat operations.

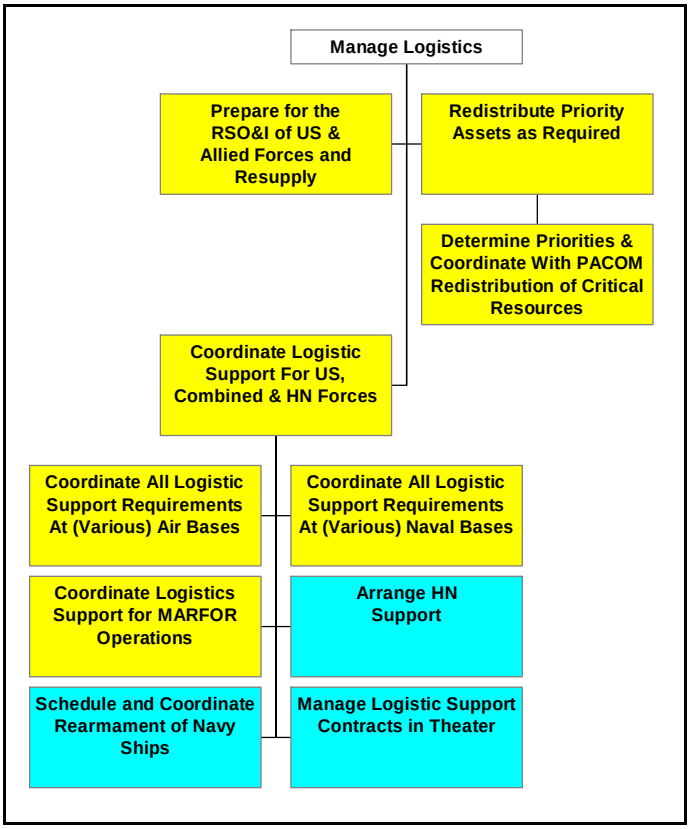

Figure F-10. Logistics Management

The supply function begins with "acquiring supplies" (Figure F-11). In fact, and as partially spelled out in the DoDD definition of logistics, before DoD can acquire something, it must be designed, developed, and produced. Before it can acquire POL products, refineries must produce the specific products DoD desires to purchase. Acquiring Tomahawk missiles includes Raytheon designing and manufacturing the missiles and the Navy's Operational Test and Evaluation Force testing the missiles.

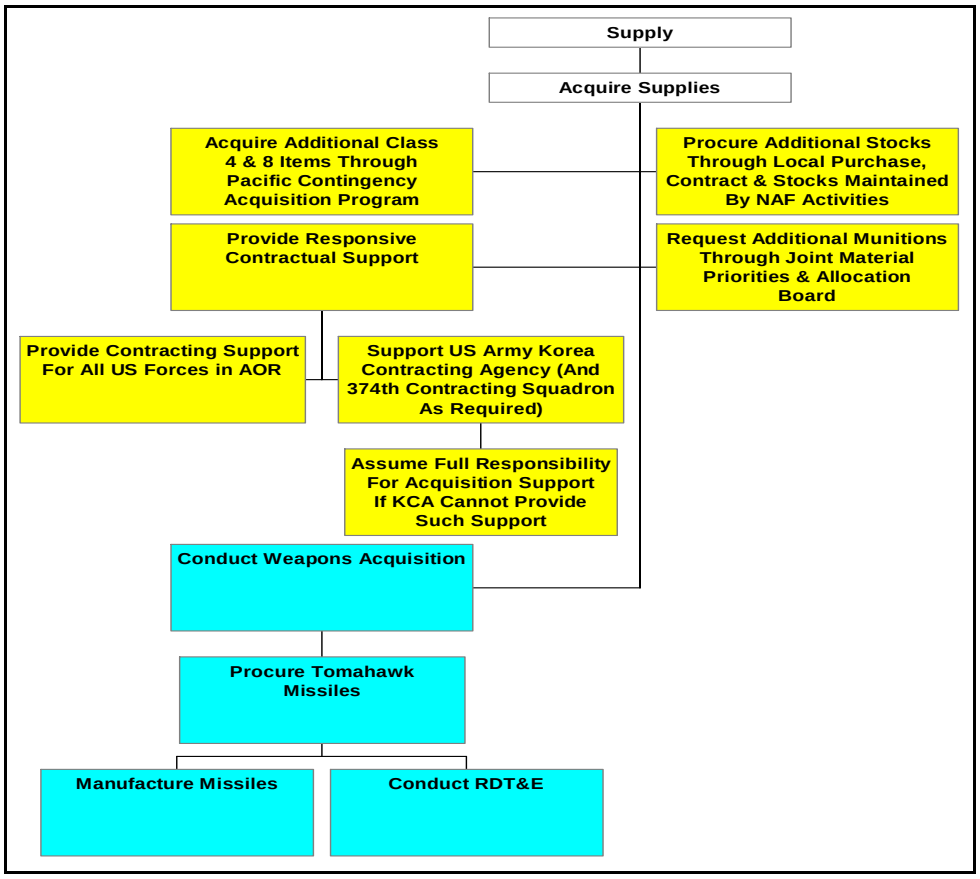

Figure F-11. Acquire Supplies

The joint commander requires numerous capabilities to manage the supply system effectively (Figure F-12, continued in Figures 13 and 14). In the case of Tomahawk resupply, it also clearly shows the dependence of the combatant commander on the services for the performance of their Title 10 functions. The tasks to coordinate Tomahawk inventories, movements, and resupply (Figure F-14) are performed by the staff of the Chief of Naval Operation and by the Naval Air Systems Command. Today, service headquarters, and other senior staffs, do not report readiness in SORTS. Creating a system that reflects the mission essential tasks to be performed at every level and reporting readiness to perform those tasks in an automated system would give commanders and decision makers at every level a much clearer picture of overall readiness and of readiness to perform specific missions.

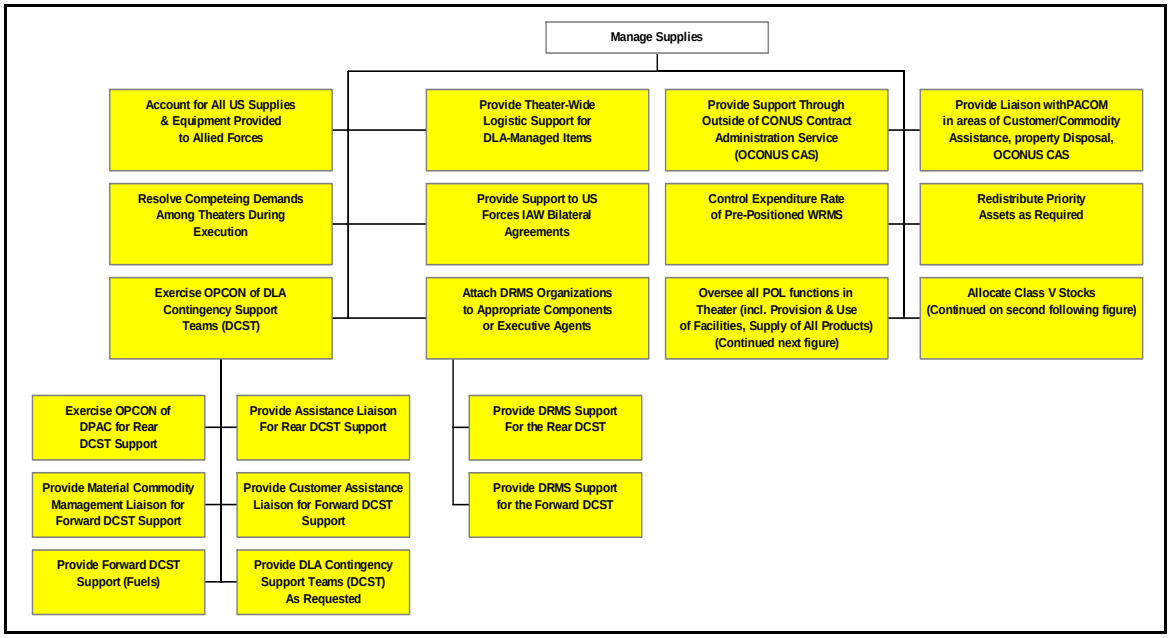

Figure F-12. Managing Supplies

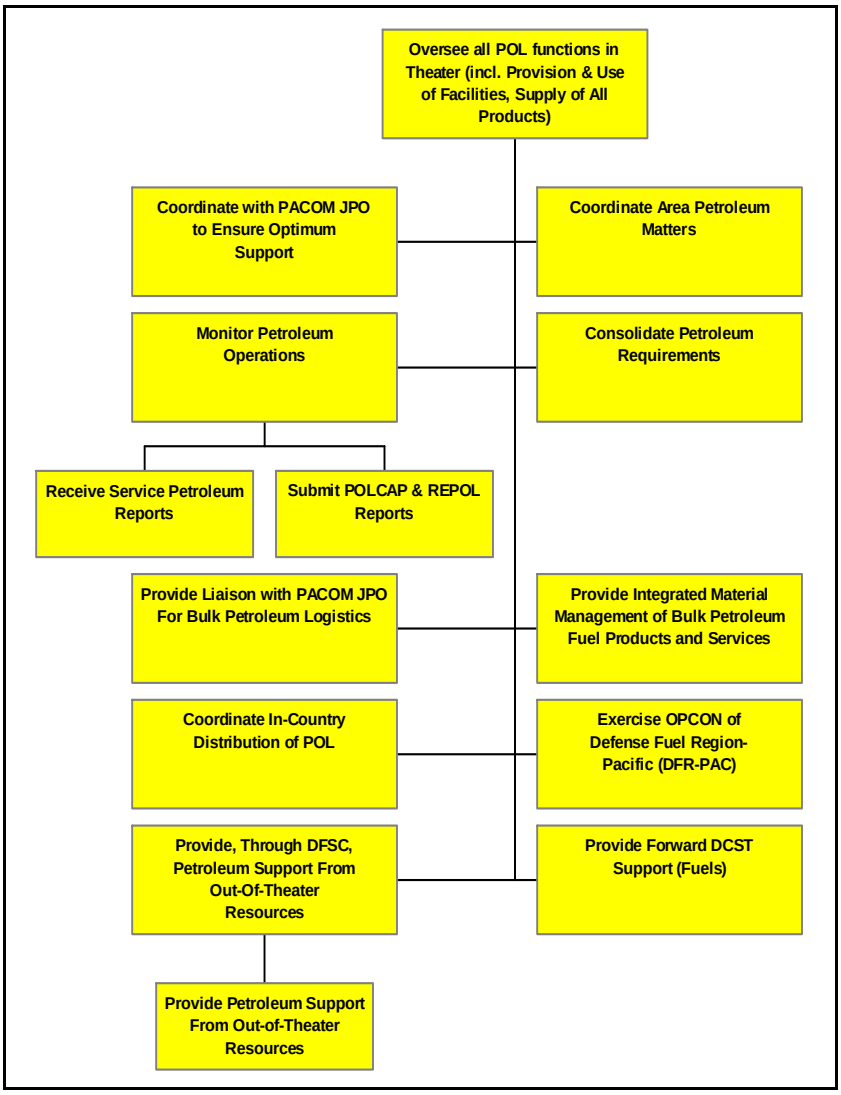

Figure F-13. Manage POL

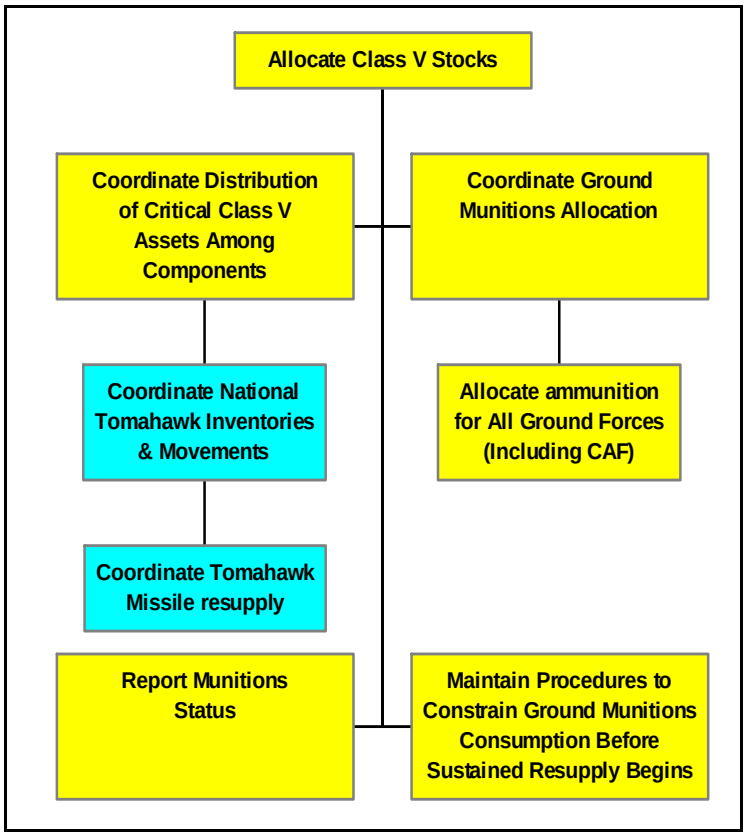

Figure F-14. Managing Munitions

The importance of maintaining adequate stocks of POL and ammunition is reflected in the attention paid to those classes of supply in the OPLAN. Both items are closely managed on a global basis. Their management is an essential part of every OPLAN. There is no reason why there should not be a standardized methodology for describing the tasks associated with those functions. Conditions and standards would change based on the region and mission, but the basic tasks would be the same everywhere. Standardized task trees would assist planners, operators, those evaluating readiness, and those required to make management decisions.

Figure F-14 shows the munitions management tasks taken from the OPLAN. Note that there is no task for the management of air or naval munitions. This is an apparent omission from the OPLAN. In recent operations, it has not been ground munitions, but aviation precision guided munitions (PGMs) and air and sea launched cruise missiles that have been of greatest concern. In particular, in the war in Afghanistan, the Navy was forced to borrow a large number of PGMs from the Air Force. An OPLAN should be inclusive in dealing with topics of major concern to the combatant commander. Development of complete task trees for each DoD system and their use in the planning process would aid in accomplishing that objective, as well as provide a firm basis for readiness reporting.

There is not a clear delineation of task functions in the OPLAN between the supply system and the engineers when it comes to describing requirements for receiving and storing supplies. Compare Figure F-15 to the civil engineer functions shown in Figure F-20 that reflects the tasks associated with providing air and seaport facilities for debarkation. Establishment of task trees with clear output measures for each task function would serve to eliminate such overlaps and would assist in assessing readiness to perform the related tasks. Clarifying task flow would also aid in identifying constraints within a system, and thereby assist managers and decision makers in the allocation of resources.

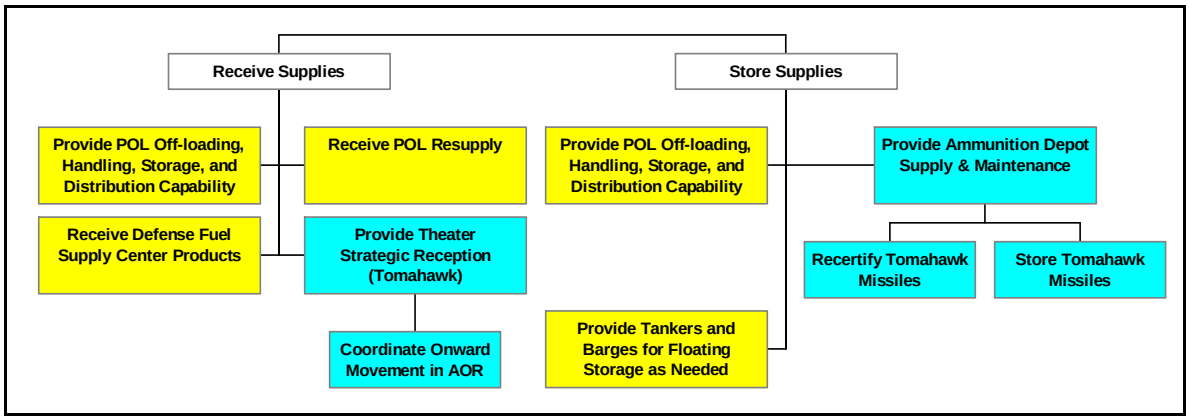

Figure F-15. Receiving & Storing Supplies

As seen in both Figure 15 and Figure F-16, when it comes to dealing with receiving, storing and issuing supplies, the OPLAN again discusses only ammunition and POL in any detail (Class VI is the only other class of supplies directly mentioned.). While ammunition and POL may be the most critical supplies, it would seem reasonable that having a task tree that accounted for all classes of supply would be useful to planners, in particular. It may be that the combatant commander can defer to the services in a number of areas, but at some level, readiness to provide all classes of supply is a concern.

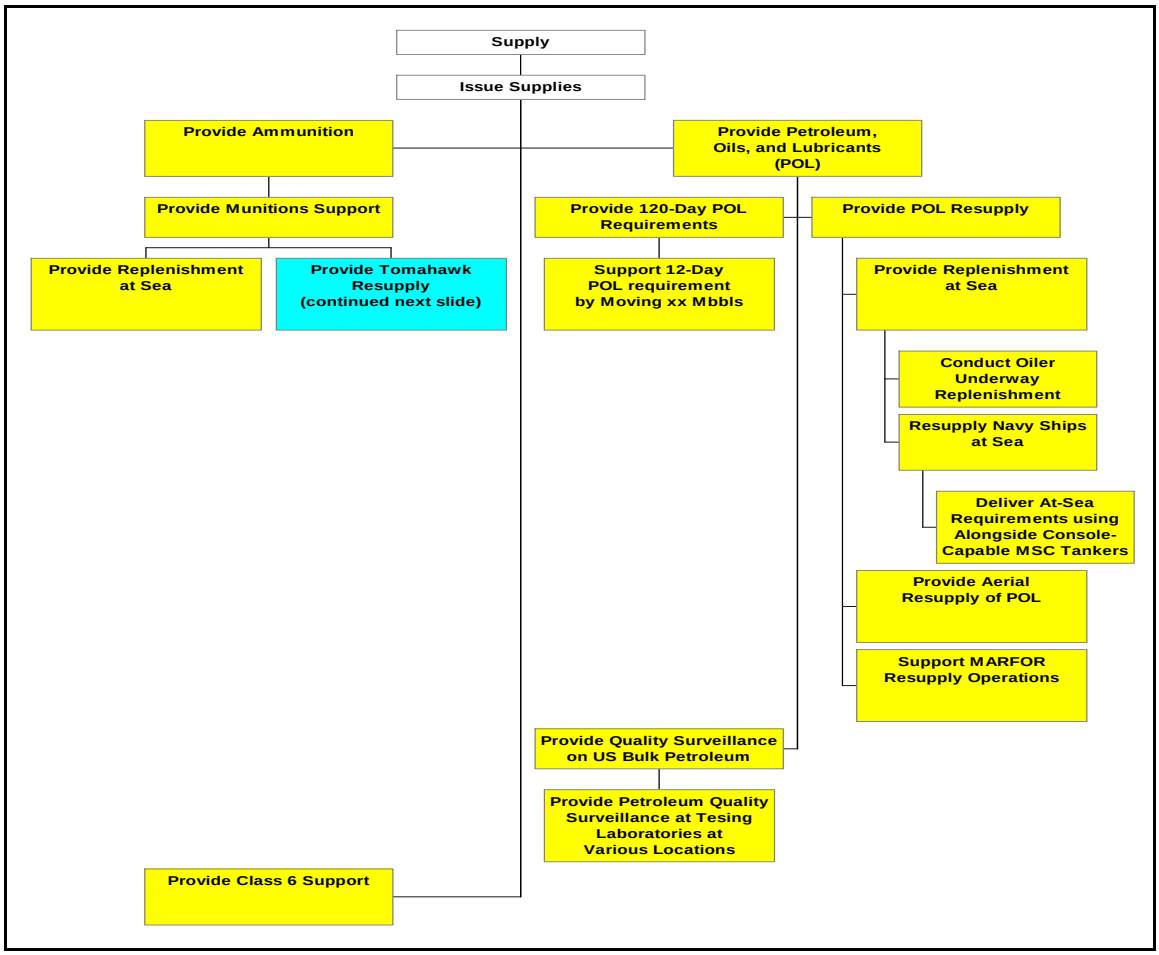

Figure F-16. Issuing Supplies

Figure F-17 depicts the flow of tasks necessary to resupply Navy ships and submarines, in theater, with one type of munition. The task tree flows naturally from one specific task in the OPLAN—provide munitions support. Were organizations to be associated with each of these tasks, it would be seen that everyone from the staff of the CNO to a special fly away handling team is involved in the logistics system. Ultimately, the combatant commander's readiness to execute his OPLAN is dependent on the readiness of every branch in every one of his task trees to provide the output with which it has been tasked. The ability to know this readiness is dependent on understanding the complete makeup of each task tree (system). Standardizing such task trees would allow commanders, planners, operators, logisticians, and acquisition managers to speak intelligently and on the same basis to the critical elements of military readiness.

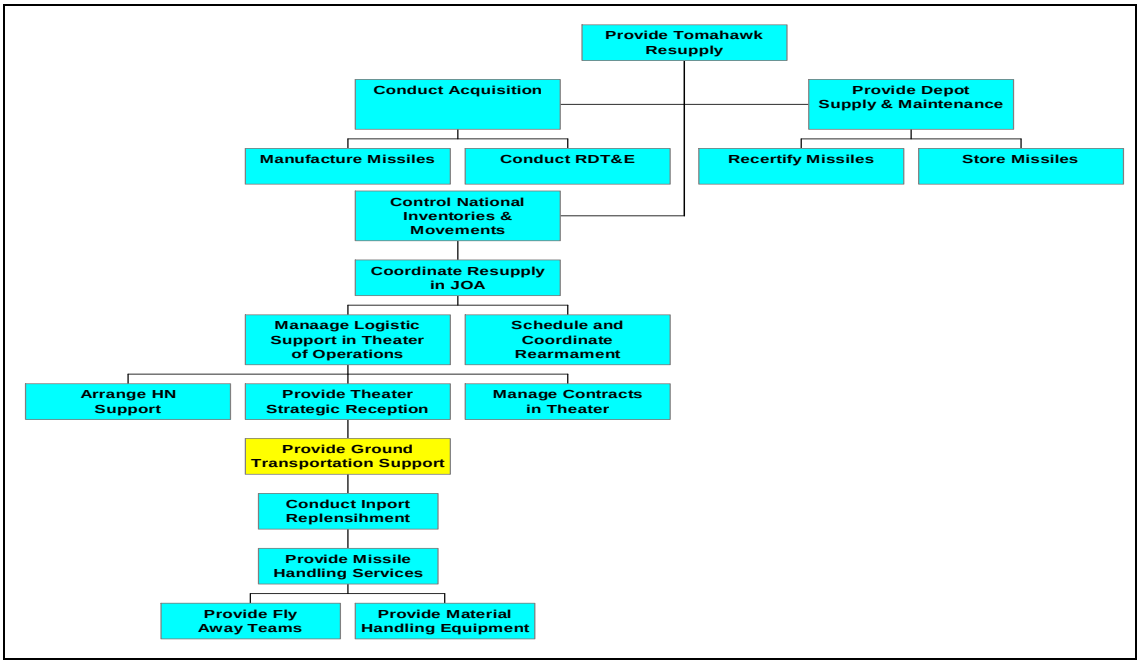

Figure F-17. Tomahawk Resupply

One additional note with regard to the supply functional area. It should also logically include:

Processing salvage for disposition

Providing captured enemy materials to intelligence agencies

Reporting capture of enemy material items of unusual significance

Disposing of captured enemy material

DRMO functions

These tasks are found in the OPLAN but are not included among the tasks spelled out under "Logistic Support Requirements Functional Areas" in Joint Pub 4-0. The definition of "logistics" in the DoDD does include "disposition of material," so finding a doctrinal home for these routine tasks is not a particular problem. However, once again, a greater degree of clarity in the planning process could be achieved by reconciling terminology and definitions in the joint publications.

Figure F-18 highlights the importance of planning in terms of specific tasks with specific outputs. The tasks indicated here are both general and redundant. The combatant commander should specifically defer service level maintenance to the services, but he should be specific in delineating his requirements for maintenance support intended for joint, host nation, or allied purposes.

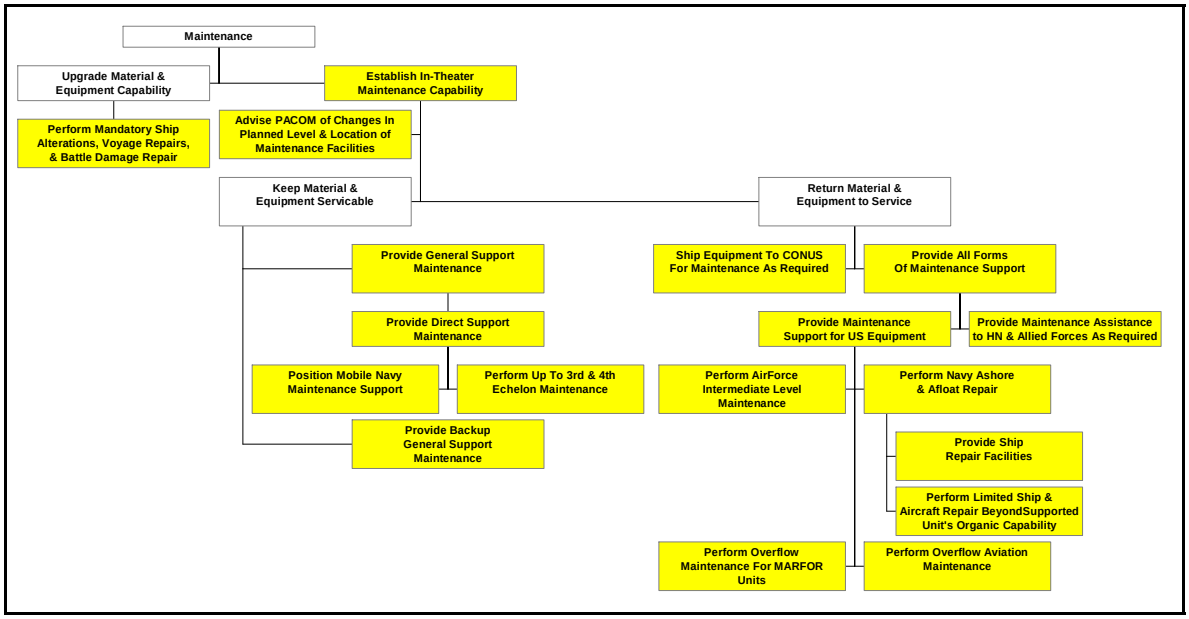

Figure F-18. Maintenance

Figure F-19 is another example reflecting the redundancies that result from writing an OPLAN without the benefit of an established and disciplined task structure or the consistent application of a well-defined task terminology. The basic tasks involve the movement of people (either as units or individuals) and the movement of equipment and supplies. The provision of terminal and enroute support constitutes subordinate or supporting tasks. The specific personnel and materials to be moved and the method of transport constitute the conditions of the tasks. The amount of material or number of people to be moved and the distance they must be moved in a given period of time constitute the standards for the tasks. The focus in assigning tasks should be on specifying the output desired (the "what"), not the method of accomplishment (the "how" and the "by whom").

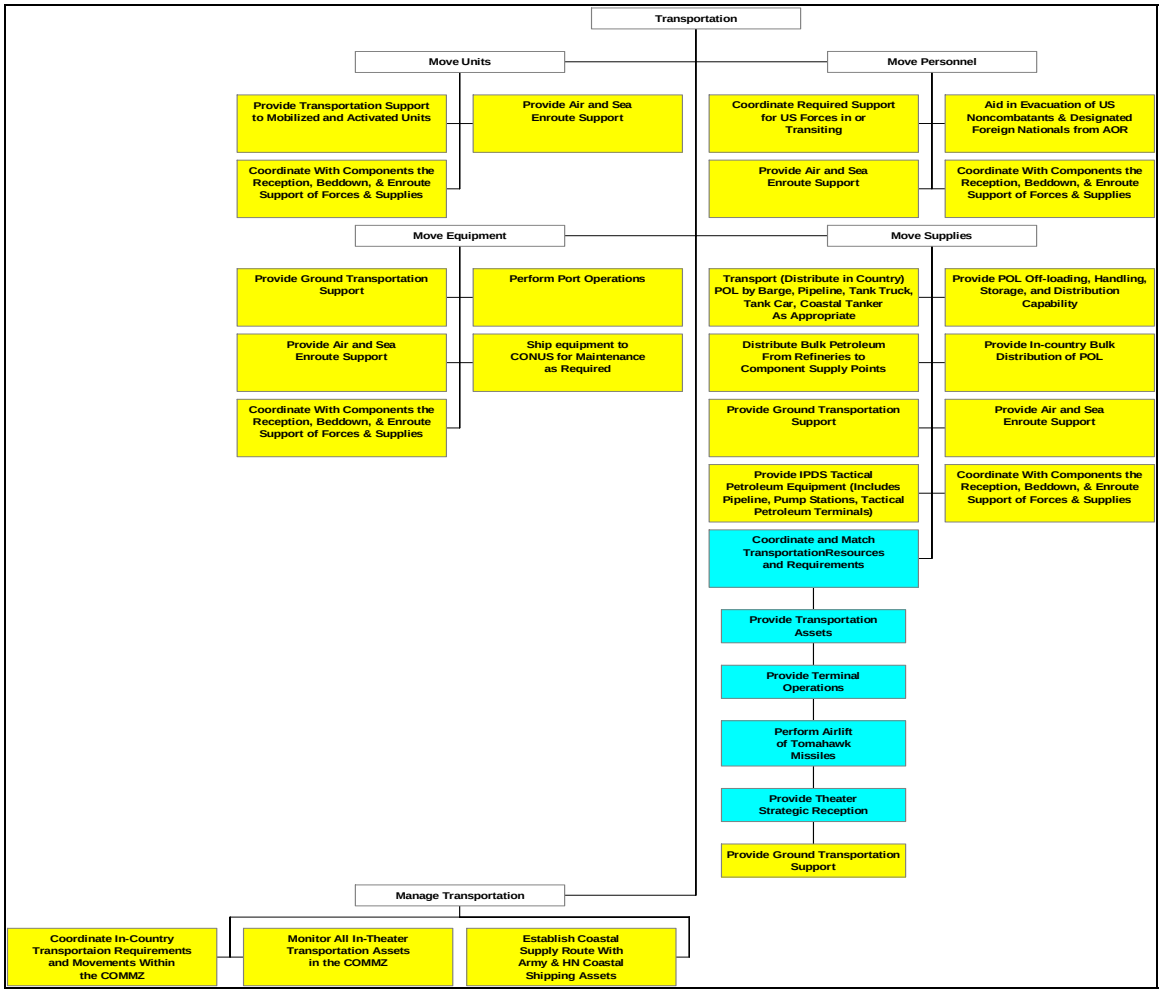

Figure F-19. Transportation

The tasks reflected in Figure F-20 give a broad outline of what the civil engineers are expected to provide. Whether readiness (specific task capability) exists would depend on the full development of the task tree, including the attachment of conditions and standards to the tasks. Once again, there is considerable redundancy in the OPLAN taskings. The engineers need to provide certain types of facilities. Providing a given type of facility should be considered sufficient when prescribing the task required of the engineers. For whom the facilities are to be provided and the capacity of those facilities constitute the conditions and standards for the tasks. The task, together with its conditions and standards, describe the output or capability that the combatant commander requires.

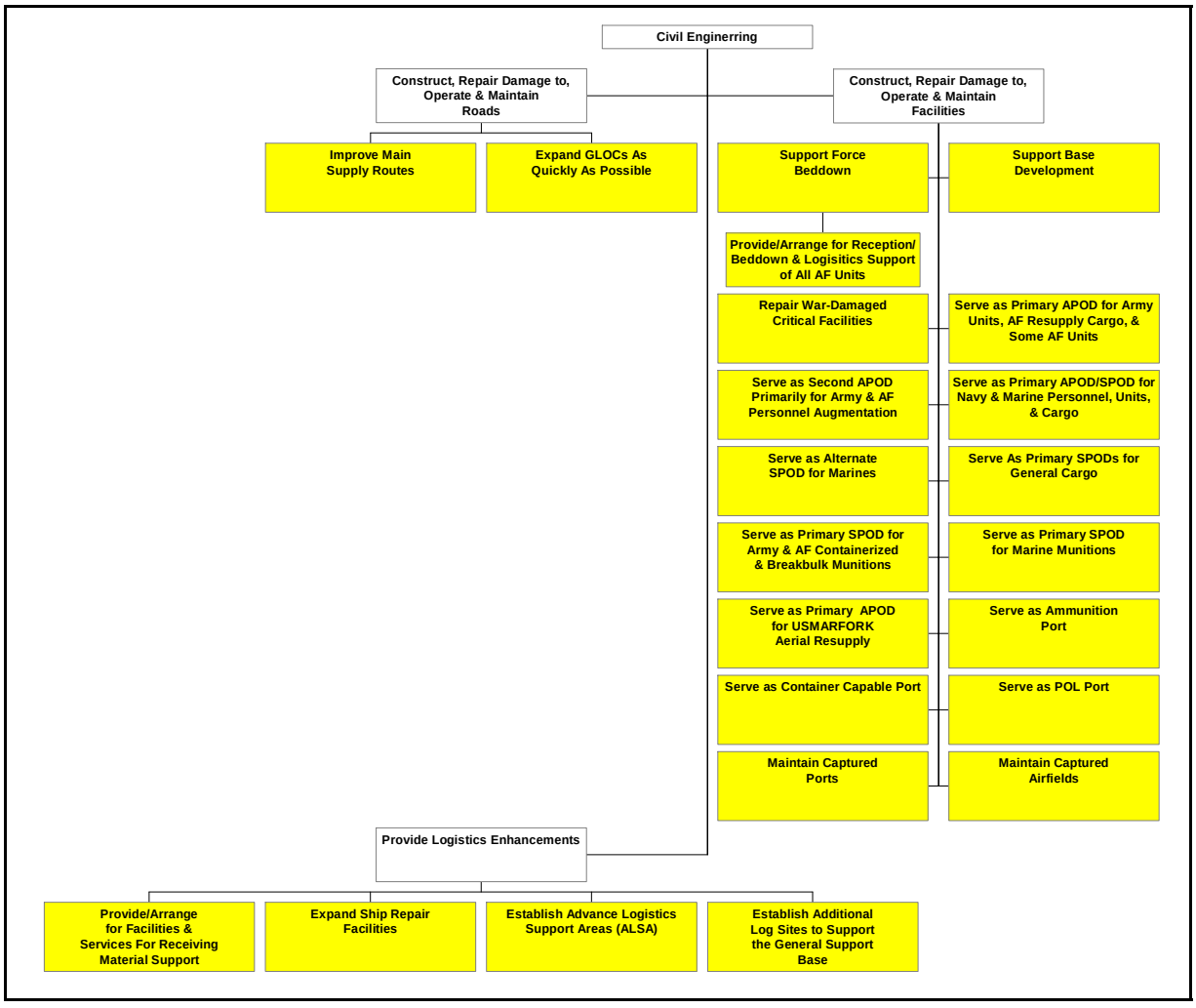

Figure F-20. Civil Engineering

Although health services are defined as a logistic function that includes the several subordinate functions shown in figure F-21, there are almost no health service tasks assigned in the logistic annex. Presumably, those tasks are covered primarily in the separate medical annex. It would be useful for the joint publications to clarify the definitions and responsibilities for health and medical services.

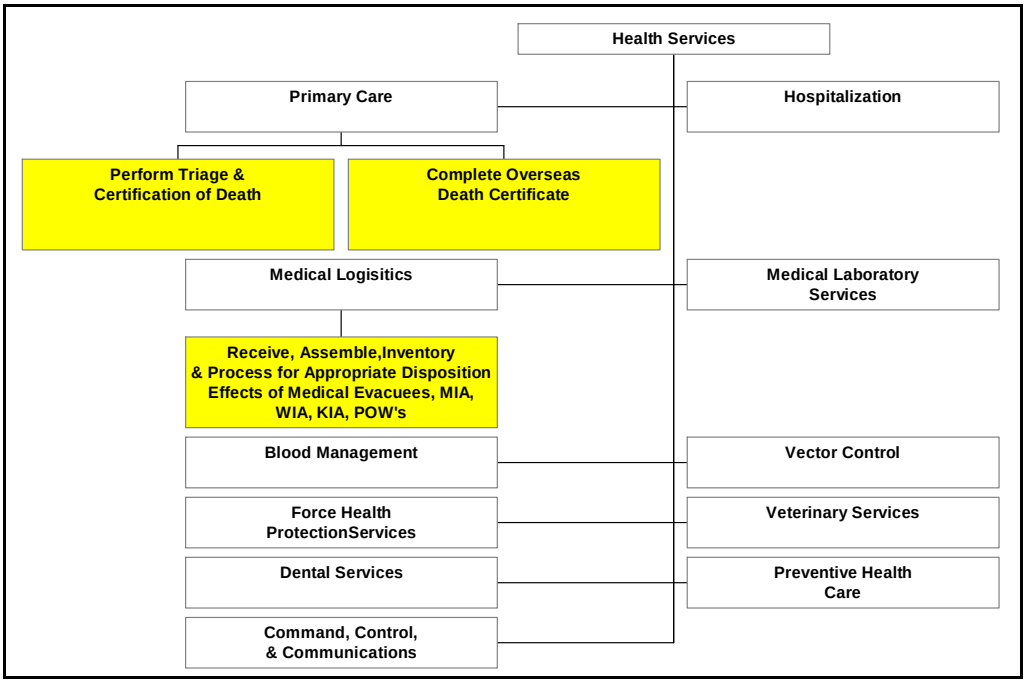

Figure F-21. Health Services

Although the other logistic services seen in Figure F-22 are included as part of a distinct logistics functional area in Joint Pub 4-0, the OPLAN logistic annex dealt only with mortuary affairs, which it did in extreme detail. The task called for in the OPLAN to interpret a portion of the Geneva Convention was included here under "other services," though it would more logically seem to belong in an annex on legal affairs.

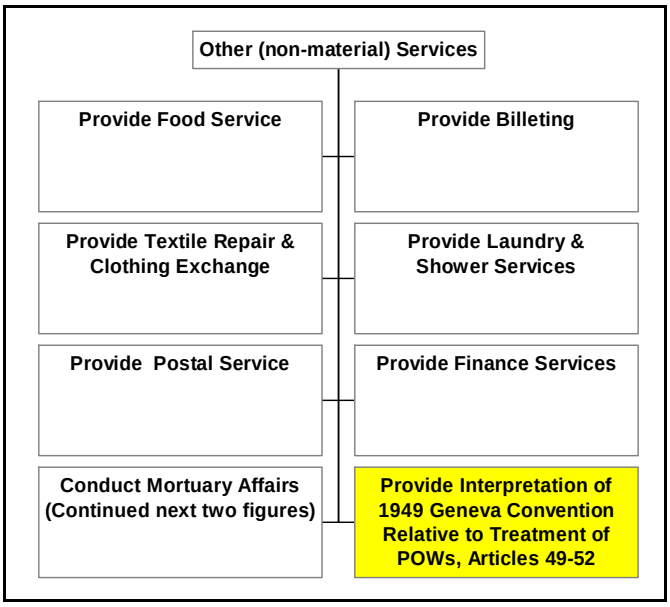

Figure F-22. Other Services

The final two figures provide a task tree for mortuary affairs based on the OPLAN logistic annex. It is interesting to note that the annex provides far more detailed planning and a far greater list of tasks for mortuary affairs than for any other single aspect of logistics. There is no explanation for this. However, the comparison of this detailed task tree to the sparse task trees developed in some other areas does highlight the inconsistencies inherent in the current methodology for OPLAN development. This in itself is an indication of the difficulty that exists today in efforts to assess readiness. Stovepiped organizations that plan and operate without associating their functions with overall systems or the detailed plans of the various combatant commanders are ill-prepared to assess and report their readiness relevant to the requirements of those larger systems and missions. By performing their functions on a daily basis and learning from past mistakes, they often come close to "getting it right." A far better system would be one in which every organization is told specifically what it is expected to produce and reports its readiness in terms of its ability to provide that output. The existence of task trees, derived in every case from the requirements levied by the combatant commanders would be a major step forward in rationalizing the planning process and in facilitating the reporting of readiness throughout the DoD.

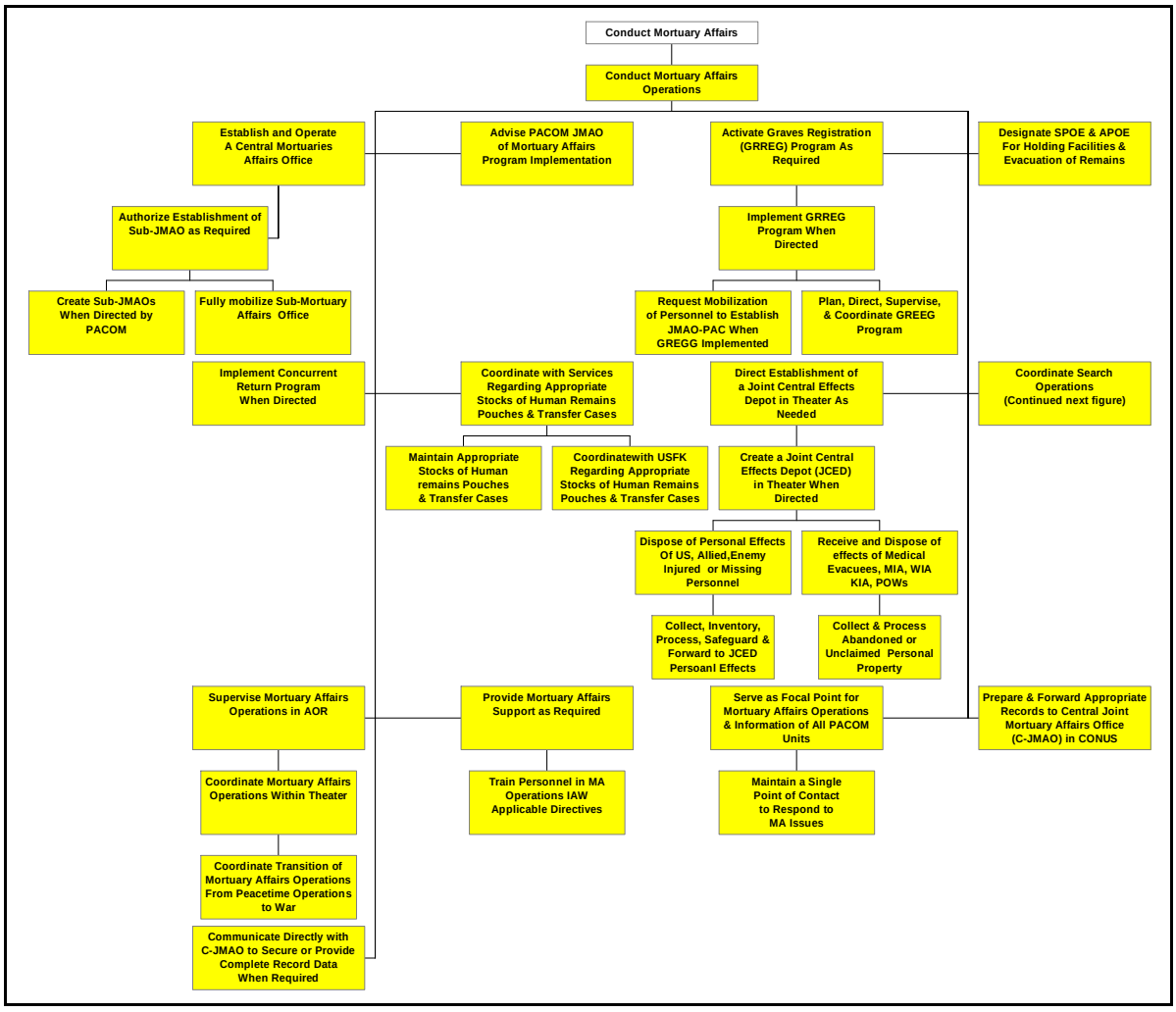

Figure F-23. Mortuary Affairs

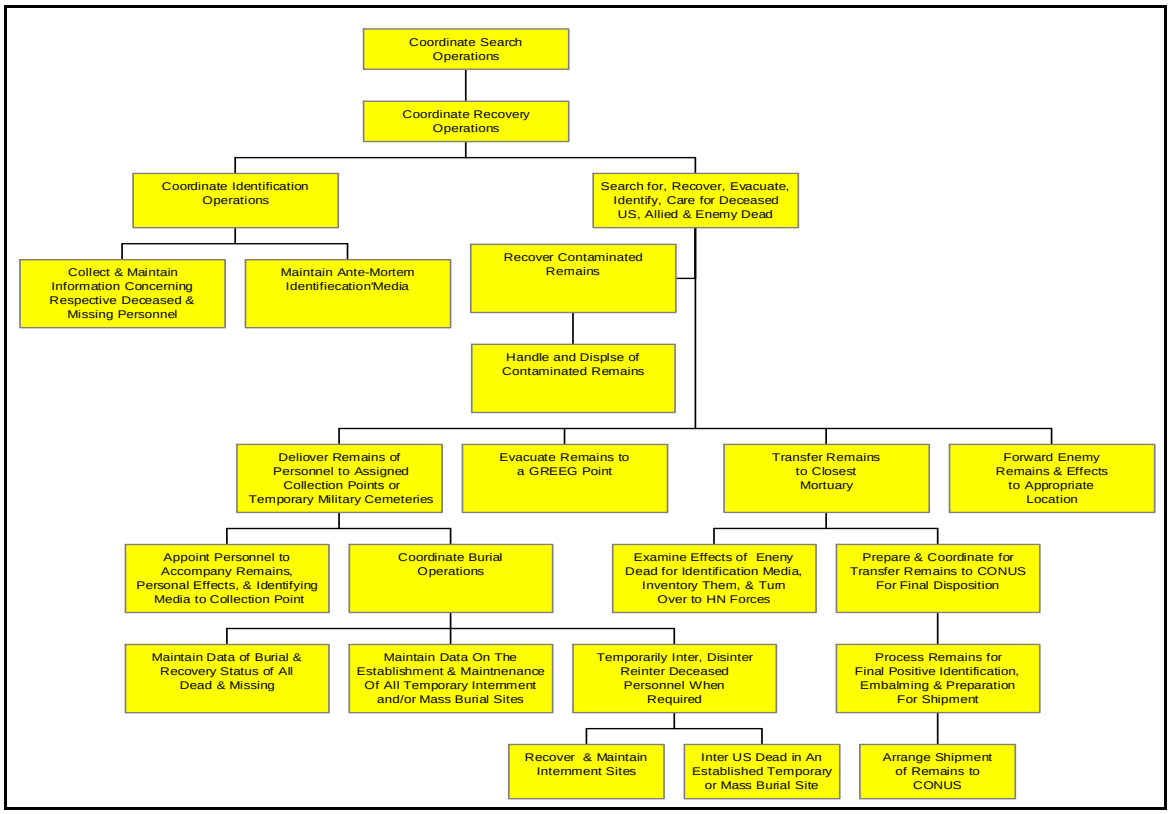

Figure F-23. Mortuary Affairs (cont.)

Concluding Remarks

Figure F-24 depicts what the OPLAN annexes describe as separate tasks: "provide logistic support for/to…" In fact, each task contains all the same basic requirements as "provide logistic support" for the entire force. The elements of logistic support are the same, whether they relate to a joint force or to a single service.

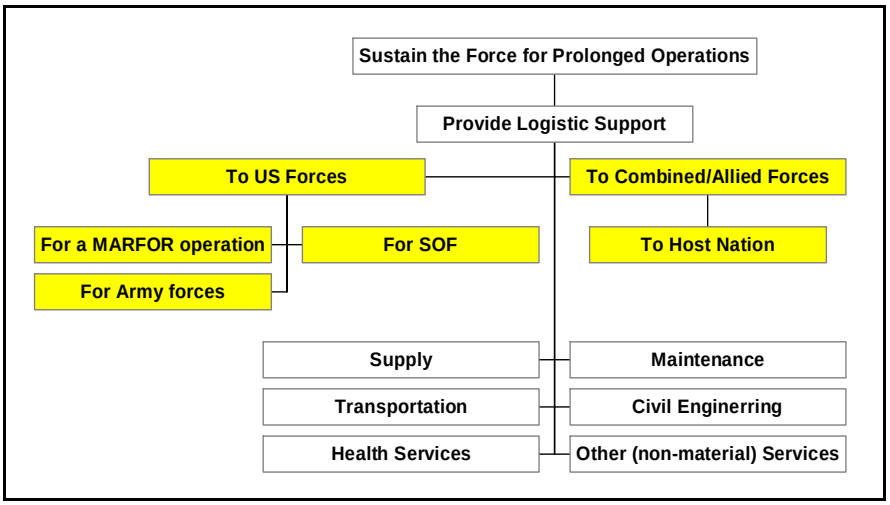

Figure F-24. Provide Logistic Support to…

There are two points to be made. First, sustainment needs to be viewed as a joint function. No service can go it alone. The Army and the Navy cannot provide strategic airlift. The Air Force cannot provide the sealift or tanker support needed to move supplies (including POL and ammunition) into theater. DoD directives, cross service agreements, and the use of executive agents are examples of how provision for joint sustainment can be made. Secondly, changing the recipient of the action does not change the task. An appropriate task in each case remains: "provide logistic support." The modifying words "for/to…" relate to the conditions and standards of the task, but are not necessary to describe the basic task. The conditions and standards may ultimately determine to whom the task is assigned, but the task itself, including its six basic elements, will remain the same.

The OPLANS in existence today work. Military operations around the world prove that fact. However, that may be more a testimony to the ingenuity and hard work of those who execute the plans than to the coordination and integrated efforts of the planners who have crafted major portions of the plans in splendid isolation. As we have

discovered in dissecting a portion of a major OPLAN, OPLANS provide a poor basis for analyzing overall readiness of our military force structure and its supporting infrastructure. To grasp the overall picture of a proposed operation, a senior commander or civilian leader would need to weave together the requirements spelled out in a large number of plans and supporting documents prepared by combatant commanders, services and defense agencies. Even were he to do so, he would find himself forced to rely on the adequacy of unconnected stovepipes and established service and agency cultures. There is no doubt that the services and agencies, as well as the organizations that comprise the various stovepipes, are accomplished in their core competencies. The question remains, however, as to whether together they are prepared to provide the full range and depth of capabilities required by the combatant commanders to carry out the joint warfight. In other words, are the services, defense agencies, allied and host nation assets, and U.S. civilian supporting organizations prepared to provide the outputs, given a specific set of standards and conditions, necessary to satisfy the requirements of the combatant commanders?

We conclude that the creation of OPLANS and their analysis should be based on the use of a consistent set of doctrinally specified tasks. Having an established set of tasks helps the planners by insuring that they are dealing with all critical issues in advance—that they have spelled out the tasks that need to be accomplished and have assigned responsibility for accomplishing those tasks. The operators, using the same set of tasks, can be reasonably confident that they are deploying the proper force structure and can then evaluate the readiness of the specific forces and other related organizations responsible for accomplishing the tasks. The operators will also be assured that they have a relevant set of tasks upon which to base their ongoing training programs and are in a position to develop meaningful standards for evaluating the conduct of that training. Acquisition managers, looking at a range of plans, will be more likely to fund those programs that contribute to the accomplishment of essential tasks identified in the OPLANS. Likewise, there will be less inclination to avoid coming to terms with needed capabilities that are missing or are in short supply—the HD/LD problem—and more objective justification for reducing or eliminating unneeded capability. Senior leaders will be better prepared to make decisions concerning the allocation of resources when they are able to see more clearly the constraints illustrated by matching doctrinal tasks to the readiness of their forces, or other organizations, responsible for accomplishing those tasks.

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Appendix G
ACRONYMS

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ACRONYMS

AAW	Anti-Air Warfare (Navy)
ACC	Air Combat Command
AEF	Air and Space Expeditionary Force
AEW	Air Expeditionary Wing
AFDD	Air Force Doctrine Document
AFTL	Air Force Task List
AFI	Air Force Instruction
ALCS	Airlift Control Squadron
ALO	Air Liaison Officer
AOC	Air Operations Center
AOR	Area of Operations
APOD	Aerial Port of Debarkation
AMC	Air Mobility Command (USAF)
AME	Air Mobility Element
AMETL	Agency Mission-Essential Task List
AMRAAM	Advanced Medium Range Air-to-Air Missile
APOD	Aerial Port of Embarkation
APOE	Aerial Port of Debarkation
ARG/MEU (SOC)	Amphibious Ready Group/Marine Expeditionary Unit (Special Operations Capable)
ART	AEF UTC Reporting Tool (Air Force); Tactical Task (Army)
ASD (NII)	Assistant Secretary of Defense for Command, Control, Computers and Intelligence
ASW	Antisubmarine Warfare
AR	Army Regulation
BDA	Bomb Damage Assessment
BG	Battle Group (Navy)

BOS	Battlefield Operating Systems
C4	Command, Control, Computers, and Communication
C-DAY	Unnamed day on which a deployment operation commences
CAF	Combined Air Force
CAIMS	Conventional Ammunition Integrated Management System
CAS	Close Air Support
CASREP	Casualty Report (Navy)
CB	Chemical and Biological
CC	Combatant Command
CENTCOM	US Central Command
CHE/MHE	Cargo Handling Equipment/Material Handling Equipment
COMSPACECOM	Commander, US Space Command
COMTRANSCOM	Commander, US Transportation Command
CEP	Chairman's Exercise Program
CJCS	Chairman of the Joint Chiefs of Staff
CJCSI	Chairman of the Joint Chiefs of Staff Instruction
CJCSM	Chairman of the Joint Chiefs of Staff Manual
CONPLAN	Contingency Plan
CONUS	Continental United States
CNO	Chief of Naval Operations
CPG	Contingency Planning Guidance
CRAF	Civil Reserve Airlift Fleet
CST	Communications Support Team
DCS	Defense Communications System
DCST	Defense Logistics Agency Contingency Support Team
DFR	Defense Fuel Region
DFSC	Defense Fuel Supply Center

DIA	Defense Intelligence Agency
DISA	Defense Information Systems Agency
DLA	Defense Logistics Agency
DOC	Designed Operational Capability
DoD	Department of Defense
DoDD	Department of Defense Directive/ Department of Defense Dictionary
DPG	Defense Planning Guidance
DRMO	Defense Reutilization Marketing Office
DRRS	Depart of Defense Readiness Reporting System
DTS	Defense Transportation System
DUSD(R)	Deputy Undersecretary of Defense (Readiness)
ESORTS	Enhanced SORTS
FORSCOM	Forces Command (Army)
FYDP	Future Years Defense Program
GREGG	Graves Registration
GSORTS	Global Status of Resources and Training System
HARM	High-speed Anti-radiation Missile
HD/LD	High Demand/Low Density
HN	Host Nation
HNS	Host Nation Support
ICP	Inventory Control Points
IDA	Institute for Defense Analyses (www.ida.org)
IPL	Integrated Priority List
ISR	Intelligence, Surveillance, Reconnaissance
JCC	Joint Core Competency
JCED	Joint Critical Effects Depot
JFACC	Joint Force Air Component Commander

JFLCC	Joint Force Land Component Commander
JIC	Joint Intelligence Center
JLOTS	Joint Logistics Over-the-Shore
JMA	Joint Mission Area
JMAO	Joint Mortuary Affairs Office
JMET	Joint Mission-Essential Task
JMETL	Joint Mission-Essential Task List
JMRR	Joint Monthly Readiness Review
JOA	Joint Operations Area
JOPES	Joint Operation Planning and Execution System
JP	Joint Publication
JPO	Joint Petroleum Office
JQRR	Joint Quarterly Readiness Review
JROC	Joint Requirements Oversight Council
JSC	Joint Chiefs of Staff
JSCP	Joint Strategic Capabilities Plan
JSPS	Joint Strategic Planning System
JTA	Joint Table of Allowances
JTAV	Joint Total Asset Visibility
JTF	Joint Task Force
JTIMS	The Joint Training Information Management System
JTS	Joint Training System
JWC	Joint Warfighting Capability
JWCA	Joint Warfighting Capability Assessment
KCA	Korea Contracting Agency
LANTIRN	Low-Altitude Navigation and Targeting Infrared for Night
LOTS	Logistics Over-the-Shore

MAE	Mission Accomplishment Estimate
MARC	Mobility Air Reporting and Communications
MCAS	Mission Capability Assessment System (Navy)
MET	Mission-Essential Tasks
METL	Mission-Essential Task List
MISCAP	Mission Capability Statement
MOE	Measure of Effectiveness
MOP	Measure of Performance
MPF	Maritime Pre-positioned Force
MPS	Mission Performance Standards
MSC	Military Sealift Command
MST	Mission Support Team
MTMC	Military Traffic Management Command
MTP	Mission Training Plan
MW	Major War
NAF	Numbered Air Force
NMET	Naval Mission Essential Task
NMETL	Naval Mission Essential Task List
NMS	National Military Strategy
NSS	National Security Strategy
NTA	Naval Tactical Task
NWP	Naval Warfare Publication
O&M	Operations and Maintenance
OPCON	Operational Control
OPLAN	Operational Plan
OSD	Office of the Secretary of Defense
OUSD (AT&L)	Office of the Under Secretary of Defense for Acquisition, Technology and Logistics

PACOM	US Pacific Command
PGM	Precision Guided Munitions
POL	Petroleum, Oil, and Lubricants
POLCAP	Petroleum, Oil, and Lubricants Capacity
POM	Program Objective Memorandum
PPBS	Planning, Programming, and Budgeting System
PRMAR	Primary Mission Area (U.S. Navy)
PSRT	Personnel; Equipment and Supplies; Equipment Condition; Training
PWRMS	Pre-positioned War Reserve Material Stock
ROC	Required Operational Capability
ROC/POE	Required Operational Capabilities/Projected Operational Environment
RSOI	Reception, Staging, Onward movement and Integration
SecDef	Secretary of Defense
SLOC	Sea Line of Communication
SORTS	Status of Resources and Training System
SPACECOM	US Space Command
SPOD	Sea Port of Debarkation
SPOE	Sea Port of Embarkation
SROC	Senior Readiness Oversight Council
TAA	Tactical Assembly Area
TACP	Tactical Air Control Party
TALCE	Tactical Airlift Control Element
TOE	Table of Organization and Equipment
TRADOC	Training and Doctrine Command (Army)
TRANSCOM	Transportation Command
TRMS	Type Commander Readiness Management System (Navy)
TSCG	Theater Security Cooperation Guide

UAV	Unmanned Aerial Vehicle
UCP	Unified Command Plan
UJTL	Universal Joint Task List
USD	Under Secretary of Defense
USD (AT&L)	Under Secretary of Defense for Acquisition, Technology and Logistics
USD (P&R)	Under Secretary of Defense for Personnel and Readiness
USFJ	United States Forces Japan
USFK	United States Forces Korea
UTL	Universal Task List
WRM	War Reserve Material
WRMS	War Reserve Material Stocks
WRSA	War Reserve Stocks for Allies

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